

SL-HF100ES

RMT-216

SERVICE MANUAL



April, 1984

711B CHASSIS

Refer to separate adjustment manual,
part number 9-972-308-81.

SPECIFICATIONS

System

Video recording system

Rotary two-head helical scanning

Audio recording system

Beta hi-fi PAL system (2 channels)
(Recording on the conventional audio
track is monaural.)

Video signal CCIR standards, PAL and DDR SECAM
colour

Aerial input 75-ohm, asymmetrical aerial socket

Stereo/bilingual system

West-German two-carrier system

Channel coverage

VHF: Western European channels
E2-E12

UHF: Western European channels
E21-E68

(Up to 12 programmes can be preset.)

RF output signal

UHF channels E30 to E39 (variable)
75 ohms, unbalanced

Video

Input

VIDEO IN: BNC connector
1.0 V ± 1.0 V (p-p)
75 ohms, unbalanced,
sync negative

Output

VIDEO OUT: BNC connector
1.0 V (p-p) ± 0.1 V (p-p)
75 ohms, unbalanced,
sync negative

Horizontal resolution

260 lines

Signal-to-noise ratio

Colour: Better than 40 dB
B/W: Better than 43 dB

Audio

Input

AUDIO IN: phono jacks
47 kilohms, -10 dBs
(0 dBs = 0.775 V rms)

Outputs

AUDIO OUT: phono jacks
Load impedance less than
10 kilohms
-10 dBs with 47 kilohms load,
unbalanced

PHONES: stereo minijack
-26 dBs, 8 ohms

Beta hi-fi PAL sound

Frequency response

20 Hz to 20 kHz (MPX FILTER OFF)

Wow and flutter

Less than 0.005% WRMS

Dynamic range More than 80 dB

Video/Audio

Output

AV: 6-pin DIN connector

— Continued on next page —



Consumer
VIDEO

Beta
B VIDEO CASSETTE RECORDER
SONY®

Tape transport

Tape speed 18.73 mm/sec.
Maximum recording time
2 hours 10 min. (with Sony L-500
cassette)
3 hours 15 min. (with L-750)
Fast forward/rewind time
Within 5 min. (with L-500)

Timer

Clock Crystal lock
Time indication 24-hour cycle
Timer setting Only for recording
2 events/week, adjustable for any day
or for all 7 days of the week
Power back-up Back-up duration of 3 minutes
minimum at one time

General

Power requirements
110 - 240 V ac $\pm 10\%$, 50/60 Hz
Power consumption
38 W
Storage temperature
 -20°C to $+65^{\circ}\text{C}$ (-4°F to $+149^{\circ}\text{F}$)
Operating temperature
 5°C to 40°C (41°F to 104°F)
Dimensions Approx. $430 \times 105 \times 380$ mm (w/h/d)
($17 \times 4\frac{1}{4} \times 14\frac{1}{4}$ inches)
including projecting parts and controls
Weight Approx. 10.5 kg (23 lbs 2 oz) net

Accessories supplied

75-ohm coaxial cable for recorder to TV
connection..... 1
Remote Commander RMT-216 with two
IEC designation R6 batteries..... 1
RF channel adjustment tool..... 1

Design and specifications subject to change without
notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following
safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK
 ON THE SCHEMATIC DIAGRAMS, EXPLODED
VIEWS AND IN THE PARTS LIST ARE CRITICAL TO
SAFE OPERATION. REPLACE THESE COMPONENTS
WITH SONY PARTS WHOSE PART NUMBERS APPEAR
AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS
PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS
THAT ARE CRITICAL TO SAFE OPERATION ARE
IDENTIFIED IN THIS MANUAL. FOLLOW THESE PRO-
CEDURES WHENEVER CRITICAL COMPONENTS ARE
REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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SECTION 1 GENERAL

1-1. WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

1-2. PRECAUTIONS

On safety

- This unit operates on 110 - 240 V ac, 50/60 Hz.
- Should any solid object or liquid fall into the cabinet, turn off the unit and have it checked by qualified personnel before operating it any further.
- To disconnect the mains lead (ac power cord), pull it out by the plug. Never pull the lead itself.

On installation

- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation grille.
- Do not install the unit near heat sources such as radiators or air ducts or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- The unit is designed for operation in a horizontal position. Do not install it in an inclined position.
- Keep the unit and cassette tapes away from equipment with strong magnets, such as a microwave oven, large loudspeakers, etc.

On operation

- When the unit is not to be used for a long period, turn off the POWER switch on the rear to conserve energy and to extend the useful life of your unit.
- Remove and store video cassettes after recording or playback.

On cleaning

Clean the cabinet, panel and controls with a dry soft cloth. Do not use a moistened cloth or any type of solvent, such as alcohol or benzene, which might damage the finish.

On repacking

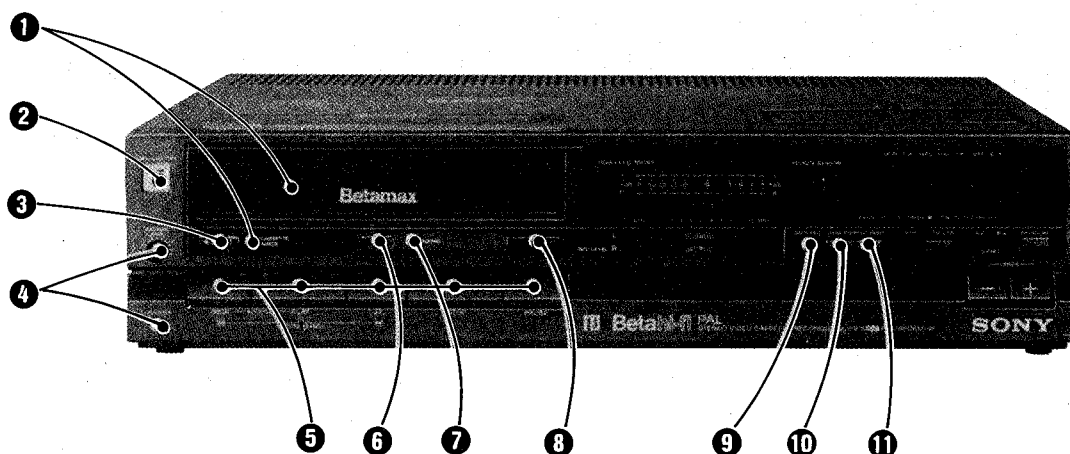
Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

On colour broadcasting systems

This machine is designed to record and playback using the PAL and DDR SECAM colour standards. Recording and playback of video sources based on other colour systems cannot be guaranteed.

1-3. LOCATION AND FUNCTION OF CONTROLS

Front



1 Cassette compartment and CASSETTE INSIDE lamp
Insert a cassette after turning on the recorder. The lamp lights up when a cassette is inside.

2 ON/STANDBY button and lamp
Press to turn on the unit. The lamp will light up. Press again to turn it off.
The timer section will continue to operate and the time will be displayed even if the ON/STANDBY button is off so long as the POWER switch is depressed (ON).

3 Δ EJECT button
Press to remove the cassette. This button does not function when the recorder is turned off.

4 PHONES jack and PHONES LEVEL control
Connect headphones to the PHONES jack (stereo mini-jack) to monitor the sound. The PHONES LEVEL control adjusts the headphone volume.

5 Function buttons
◀◀ **REW button**: Press to rewind the tape. Also used for the reverse picture search and skip scan operation.
▶ **PLAY button**: Press to play the tape back.
▶▶ **FF button**: Press to advance the tape rapidly. Also used for the forward picture search and skip scan operation.
■ **STOP button**: Press to stop the tape.
|| **PAUSE button**: Press to stop the tape for a moment during recording or playback. A still picture will be seen during playback. Press again to release the pause mode.

6 Beta hi-fi lamp
Lights to show Beta hi-fi recording, or playback of a Beta hi-fi recorded tape regardless of the BETA Hi-Fi selector's position.

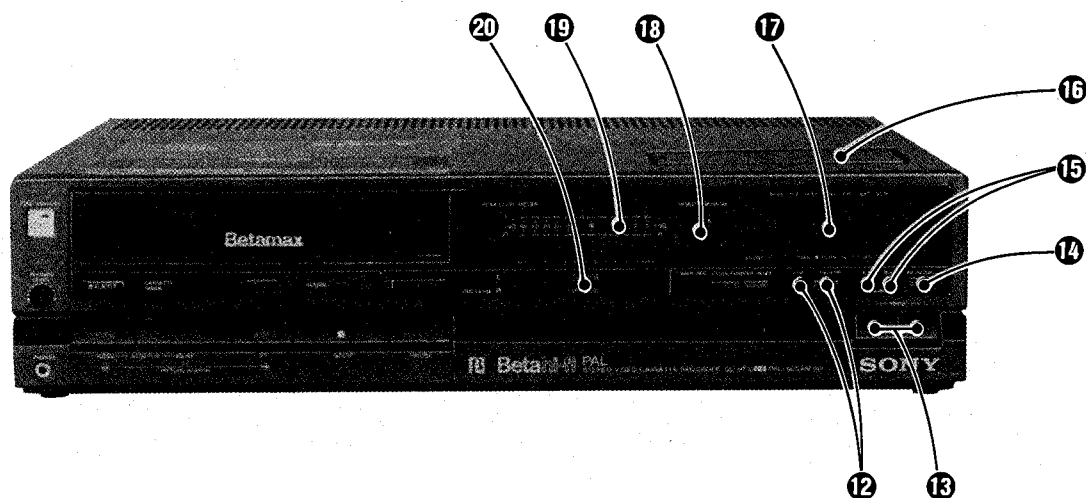
7 SOUND lamp
When the RECORD mode selector is set to SOUND, this lamp lights to show audio recording. It also lights when a tape with audio signals only is being played back.

8 RECORD button and lamp
Press to start recording. The lamp will light up.

9 TIMER REC lamp
Lights when the TIMER REC button behind the front panel is pressed to set the recorder in the timer stand-by mode. It remains lit till the timer recording is finished.

10 CLOCK/COUNTER button
Press to set the display to the tape counter. To reset to clock, press it again.

11 RESET button
Press to set the tape counter reading to "0000".



12 TV/VTR select button and VTR lamp (behind the front panel)

This button is operable when a TV is connected to the recorder's AV connector.

To view a TV programme selected by the PROG buttons on the recorder or to monitor the picture being recorded, press this button so that the VTR lamp lights up. When the PLAY button on the recorder is pressed, the recorder is automatically set in the VTR mode. To view a TV programme in the usual manner, press this button so that the lamp goes off. When the recorder is turned off, the recorder is automatically set in the TV mode.

13 PROG (programme) select buttons

Select the number of the programme to be recorded or to be viewed. Press + for higher-numbered programmes, and - for lower-numbered programmes. The selected programme number will appear in the display window.

14 BILINGUAL select button

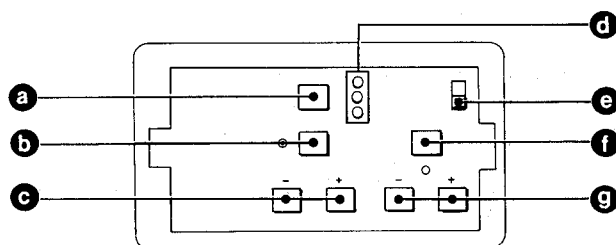
Selects the language of the bilingual TV programme.

15 STEREO A, B lamps

When a stereo TV programme is being received, both lamps light up. When a bilingual programme is being received, either A or B lamp lights up. These lamps do not activate when a pre-recorded stereo or bilingual tape is played.

16 Tuning compartment

All the switches and buttons for programming stations are in this compartment.



a RESET button: To clear the programmed station, press this button.

b AFT button and lamp: The AFT circuit activates automatically after the stations are tuned and memorized with automatic and manual programming. The AFT lamp will illuminate. If you wish to restore the AFT on the channel which has been fine-tuned manually with the FINE buttons, press the AFT button.

c FINE + and - buttons: Press to fine tune the station.

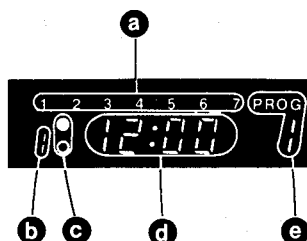
d Tuning indicator: Indicates the approximate position of the tuned station within the tuning band scanned.

e TEST SIGNAL switch: Set to ON to obtain a test pattern.

f AUTOMATIC PROGRAMMING button and lamp: To preset the receivable stations automatically, press this button. The corresponding lamp blinks during automatic and manual programming.

g SEARCH + and - buttons: Press to tune in a station. Press the - button to get a station of lower frequency and the + button to get a station of higher frequency.

17 Display window



- a Day of the week indication:** Shows the day of the week on which the timer-activated recording will take place.
- b Event number**
- c Turn-on and turn-off setting indications:** The "●" mark shows you are setting the turn-on time and the "○" mark shows the turn-off time.
- d Time and counter display:** Usually shows the present time.
When the CLOCK/COUNTER button is pressed to COUNTER, the display shows the counter number.
- e Programme number:** Shows the programme number selected with the PROG buttons.
When the INPUT SELECT switch is set to LINE/CAMERA to record signals from the VIDEO IN and AUDIO IN jacks, the indication will change to "AU".

18 REMOTE SENSOR

Detects the remote control signal transmitted from the supplied Remote Commander.

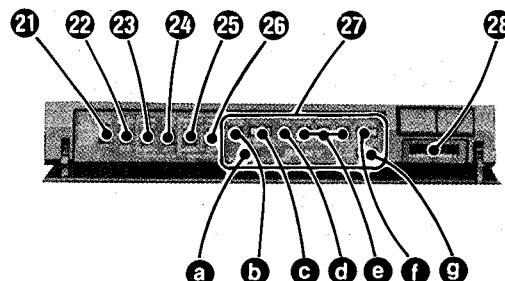
19 PEAK LEVEL METER

When the LEVEL METER switch is set to ON, these meters show the peak input level of each channel (left and right) during Beta hi-fi recording, and recording levels during playback.

20 REC LEVEL (recording level) controls

These controls adjust the audio recording level on the Beta hi-fi recording. The R control is for the right channel, and L is for the left channel. Normally set to 5 (green position) for recording TV programmes. When you are recording audio signals from other audio equipment, adjust manually to the correct position for the optimum result.

Behind front panel



21 INPUT SELECT switch

Select the programme to be recorded.

LINE/CAMERA: for recording signals connected to the VIDEO IN and AUDIO IN jacks.

TUNER: for recording TV programmes.

SIMUL: for recording FM simulcast programmes or timer-activated audio recording.

22 LEVEL METER switch

Set to ON to illuminate the peak level meters. Set to OFF to turn the illumination off.

23 RECORD mode selector

VIDEO: Normally, set to this position. Sound and picture are recorded on the Beta hi-fi system.

SOUND: Set to this position to record sound only with the Beta hi-fi system.

24 MPX FILTER (multiplex filter) switch

Normally set to ON for Beta hi-fi recording. The multiplex filter cuts off the high-frequency signals which sometimes grate on the ear. If you wish to record without cutting the high frequencies, set to OFF.

25 BETA Hi-Fi selector

Selects the video track or the audio track for sound playback.

AUTO: Normally, set to this position. The recorder will automatically select the video track for Beta hi-fi recorded tapes, or the audio track for tapes recorded without the Beta hi-fi system.

NORMAL: Set to this position when you wish to listen to the sound recorded on the audio track of a Beta hi-fi recorded tape.

26 TONE selector

This selector is only effective with sound recorded on the audio track. Normally, set to HIGH. If the high frequencies of playback sound seem exaggerated, set to LOW.

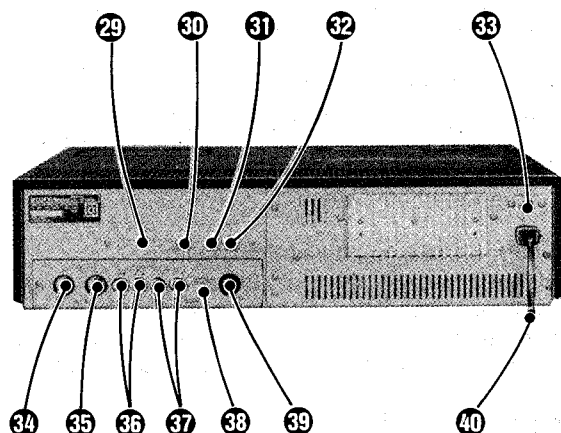
27 Timer setting section

- a CLOCK SET button:** Press to set the clock.
- b CLEAR button:** Press to clear the timer programme memorized.
- c TIMER SET button:** Press to set the turn-on/off time of a recording.
- d DAY button:** Press to set the turn-on day of a recording.
- e HOUR, 10 MIN and MIN buttons:** Press to set the turn-on/off time of a recording.
- f PROG button:** Press to select the TV programme to be recorded by the timer.
- g TIMER REC button:** Press to set the recorder in the timer recording stand-by mode.

28 TRACKING control

If streaks or snow appear during the playback of a tape recorded on another recorder, turn this knob to obtain the best possible picture.

Rear



29 RF CHANNEL screw

If there is interference on the factory-preset channel for RF output and the signal of this recorder cannot be displayed clearly on the TV screen, adjust this screw with the supplied screwdriver.

30 AERIAL OUT socket

Connect the aerial input of the TV receiver using the supplied cable.

31 DX/LOCAL switch

Normally set this switch to DX. If the TV signal is very strong, set the switch to LOCAL.

32 AERIAL IN socket

Connect the aerial cable.

33 POWER switch

This is the mains power on/off switch. Keep this switch depressed so that the clock and timer section will remain active even after the ON/STANDBY button is off. When this switch is released (OFF), the preset time and timer settings are all cleared.

34 VIDEO OUT jack (BNC type)

Connect to the video input of another video cassette recorder or a video monitor.

35 VIDEO IN jack (BNC type)

Connect to the video output of a camera, another video cassette recorder, etc.

36 AUDIO OUT jacks (phono type)

Connect to the audio inputs of a video monitor or video cassette recorder, or to the auxiliary inputs or tape input of a stereo amplifier.

37 AUDIO IN jacks (phono type)

Connect to the audio outputs of a camera or another video cassette recorder, or to the recording outputs of a stereo amplifier.

38 CAMERA REMOTE jack (special minijack)

For camera recording, connect an ac adaptor to this jack.

39 AV connector (6-pin, DIN)

Connect to the 6-pin or 8-pin DIN connector of a TV receiver or colour monitor. This connector provides the video and audio output signal.

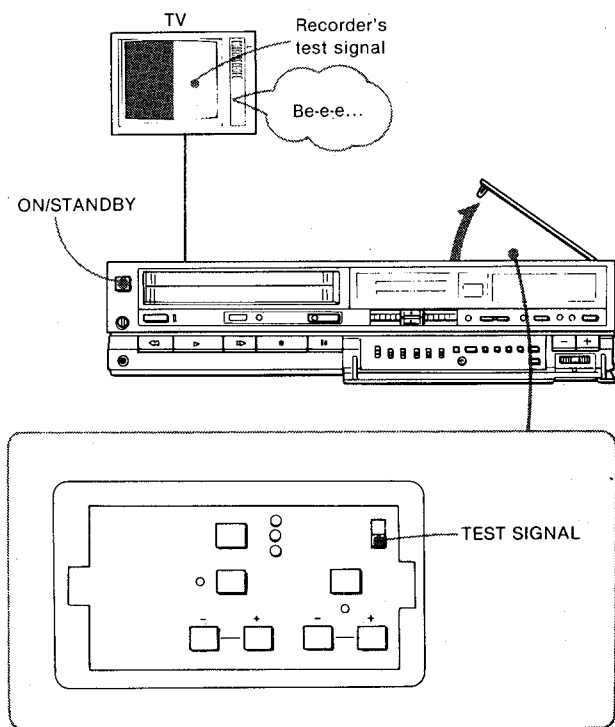
40 AC mains lead

1-4. ADJUSTING THE TV

One of the television programme positions must be adjusted to receive the signal from the recorder.

- 1 After making the connections, press the ON/STANDBY button.
- 2 Make sure that the recorder is in the stop mode and the TV is in TV mode.
- 3 Set the TEST SIGNAL switch in the tuning compartment of the recorder to ON. The test signal is transmitted on a channel between UHF channels 30 and 39.
- 4 Turn on the TV and select a programme position which is not being used to receive a TV station. Tune the channel until you see a clear black and white pattern on the TV screen and you hear a continuous tone. This is the recorder's test signal.

—If you are not sure how to adjust your TV, please refer to the TV's instruction manual or consult your dealer.

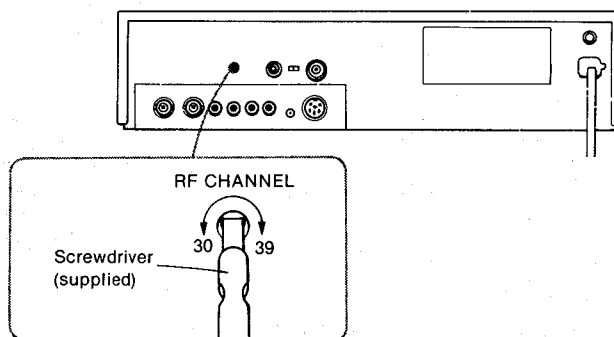


Whenever you use the video recorder, you should set the TV to the programme position selected in this adjustment.

If the test picture is free of disturbance, the TV adjustment is complete. Set the TEST SIGNAL switch to OFF.

If the test picture is not free of disturbance

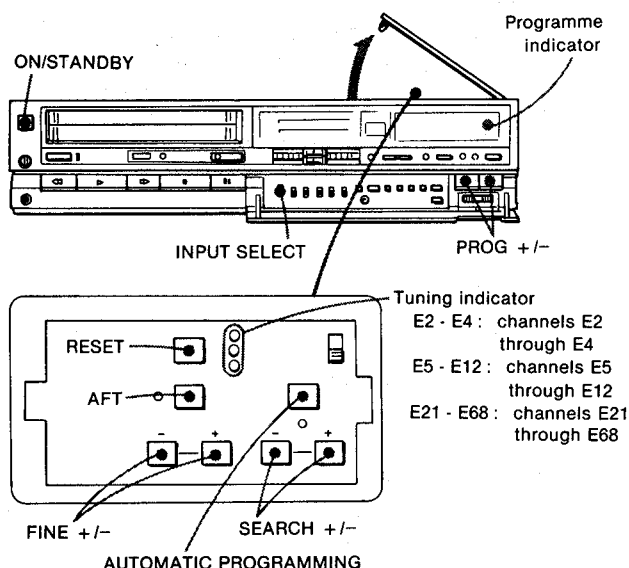
- 1 Reset the TEST SIGNAL switch to OFF.
- 2 Adjust the channel of the TV to a channel between UHF channels 30 and 39 with the tuning control or the fine tuning control on the TV, so that the TV screen shows no picture and so that a steady rustling sound or no sound is heard.
- 3 Set the TEST SIGNAL switch to ON again.
- 4 Slowly turn the RF CHANNEL screw on the back of the recorder with the supplied screwdriver, until you see an undistorted test pattern on the TV screen.
- 5 Now the TV adjustment is complete. Reset the TEST SIGNAL switch to OFF.



1-5. TV STATION PROGRAMMING

Automatic and manual programming is available. Automatic programming automatically presets up to 12 receivable stations from the lowest frequency to the highest. Manual programming is useful for presetting selected stations in any desired sequence.

To start programming, turn on the recorder by pressing the ON/STANDBY button and set the INPUT SELECT switch to TUNER.



FINE TUNING OF A WEAK STATION

If the picture on a particular programme position is not acceptable, keep the + or - FINE button pressed until the picture becomes clearer. When either of the FINE buttons is pressed, the AFT of the selected station is deactivated and the AFT lamp goes off. To view this particular station, keep the AFT deactivated. (Do not press the AFT button.)

When other memorized stations are selected, the AFT automatically activates.

ELIMINATING NOISE ON UNUSED PROGRAMME POSITIONS

Simply press the RESET button. The annoying noise will be eliminated.

AUTOMATIC PROGRAMMING

Press the AUTOMATIC PROGRAMMING button. Up to 12 receivable stations will be preset one by one from programme position 1. When no more stations can be located, programme number "1" will light on the programme indicator and automatic programming will stop.

MANUAL PROGRAMMING

- 1 Press the + or - PROG button to select the programme position.
 - + for a higher-numbered programme position
 - for a lower-numbered programme position
- 2 Press the + SEARCH button to locate a station with higher frequency and the - SEARCH button to locate a station with lower frequency. The tuning indicator will light to show the current tuning band. When a station has been received, the search will stop. Press the + or - SEARCH button again, until the desired station is received.

Repeat these steps for all desired stations.

1-6. CLOCK SETTING

When you connect the mains lead to a wall outlet, the clock indicates "0:00" with the two dots blinking.

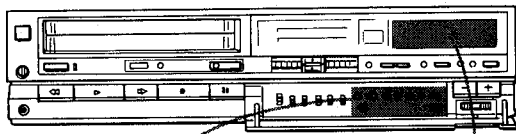
Example: To set the clock to 7:35 p.m. (19:35) on Tuesday*

* Time indication

AM				PM					
12:00 (midnight)	1:00		11:00	12:00 (noon)	1:00	2:00		10:00	11:00
↓	↓		↓	↓	↓	↓		↓	↓
0:00	1:00		11:00	12:00	13:00	14:00		22:00	23:00

Day indication

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
↓	↓	↓	↓	↓	↓	↓
1	2	3	4	5	6	7



1 CLOCK SET (SET/START)	
2 DAY	
3 HOUR	
4 10 MIN	
5 MIN	
6 CLOCK SET (SET/START) With the time signal, press and immediately release, otherwise the clock will not start operating. If you press the CLOCK SET button for more than a second, clock adjustment will be required again.	 The upper dot blinks for the first half of each minute, and the lower dot for the second half.

The DAY, HOUR, 10 MIN and MIN buttons can be pressed in two ways



When you hold a button down, the digits will advance continuously until the button is released.



When you press and immediately release a button, the digits will advance by one.

Zero second adjustment

Press the CLOCK SET button quickly (less than a second).

While the upper dot is blinking, the clock is set to the time displayed 00 second. For example, if the clock time is 7:30, 20 seconds, it is set to 7:30, 00 second.

While the lower dot is blinking, the clock advances one minute and is set to the time displayed 00 second. For example, if the clock time is 7:30, 40 seconds, it is set to 7:31, 00 second.

If you press the CLOCK SET button for more than a second, "0:00" blinks to show that the clock adjustment is required again.

When power has been interrupted for more than 3 minutes, the time indication "0:00" blinks, showing that the clock must be reset.

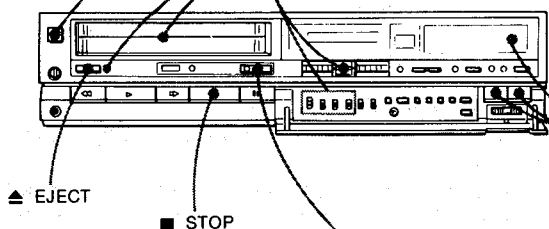
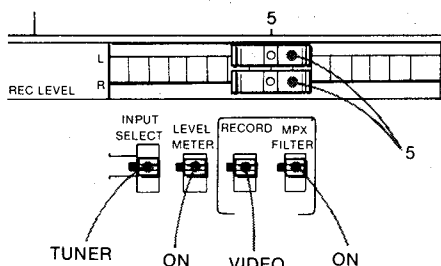
If power has been interrupted for less than 3 minutes, the displayed time remains correct.

Note: If the POWER switch is released (OFF), the same result will be obtained as in power interruption.

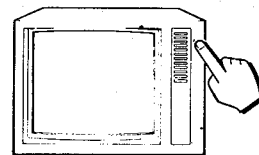
1-7. TV PROGRAMME RECORDING (Beta hi-fi recording)

Check before recording

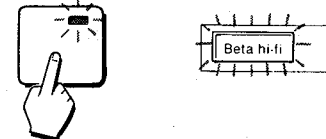
The green position is the standard setting position for Beta hi-fi recording.



- 1** Turn on the TV and select the programme position for the video recorder.

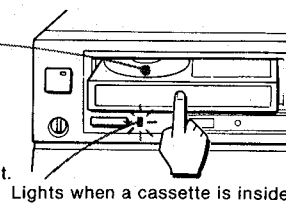


- 2** ON/STANDBY

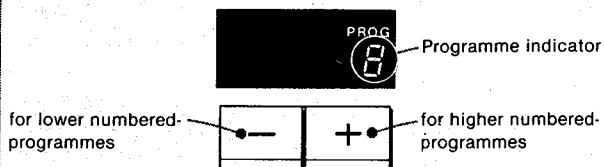


- 3** Insert the cassette with the round window to the left.

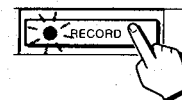
Do not use force when inserting the cassette into the compartment.



- 4** Select the programme to be recorded.



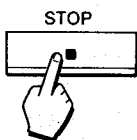
- 5** Press the RECORD button. Recording will begin.



If the inserted cassette does not have the safety tab, or if the tape is at its end, the cassette will be automatically ejected.

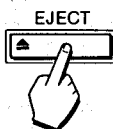
You can view another TV programme while recording, by simply selecting the programme you want to view with the TV's programme selector.

To stop recording



To eject the cassette

Press after stopping the recording.



When the tape reaches the end during recording, it will be automatically rewound to the beginning.

TO STOP RECORDING MOMENTARILY

Press the **||** button. The lamp on the button will light. The TV programme can be seen on the TV, but the picture will not be recorded.

To resume recording, press the **||** button again.

To protect the video heads and the tape, the pause mode will be automatically released after about 8 minutes and recording will stop.

TO KEEP A RECORDED PROGRAMME FROM BEING ACCIDENTALLY ERASED

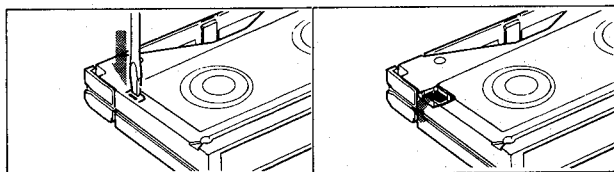
When a new recording is made on a previously recorded cassette, the previous recording will be automatically erased.

To avoid erasing a recording

Break off the safety tab using a screwdriver or similar object.

To re-record on a cassette which has had the safety tab removed

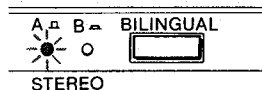
Cover the slot with a piece of plastic tape.



RECORDING A STEREO OR BILINGUAL PROGRAMME

When the STEREO A and B lamps light up, a stereo programme is being received. The recording procedure is the same as in TV programme recording.

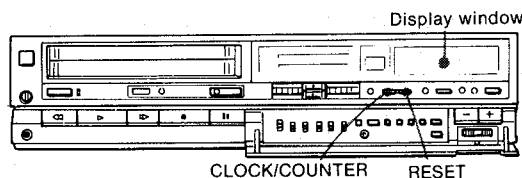
If either the A or B lamp lights up, a bilingual programme is being received. Select the local language (usually broadcast on channel A) or the original language (usually broadcast on channel B) with the BILINGUAL select button.



USE OF THE TAPE COUNTER

Turn on the power and press the CLOCK/COUNTER button to display the counter reading in the display window.

To return the display to the present time, press the CLOCK/COUNTER button again.



Before starting recording or playback, press the RESET button to set the counter to "0000".

By noting the counter reading at the desired point, you can easily find that point later by referring to the counter.

Normal rewinding will stop at the tape counter's "0000" position. To rewind the tape further, press the **◀** button again.

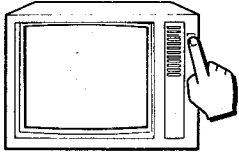
With automatic rewinding from the tape end or for "auto play", the tape will not stop at the counter's "0000" position.

Notes

- The counter reading is automatically reset to zero when a cassette is newly inserted.
- While the power is off, the display shows the present time, regardless of the CLOCK/COUNTER button setting.
- The counter reading will be retained in the memory even after the power is turned off, as long as the cassette is in the cassette compartment.
- The tape counter does not operate when a blank, unrecorded tape is played.

1-8. PLAYBACK

1



Turn on the TV and select the programme position for the video recorder.

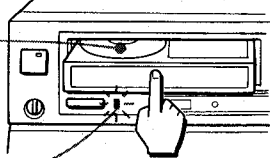
2

ON/STANDBY

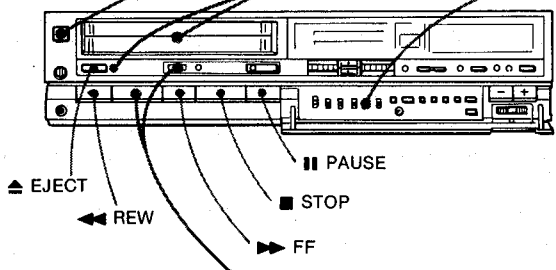


3

Insert the cassette with the round window to the left.



Lights when a cassette is inside.



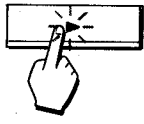
4 Usually set to AUTO.

BETA Hi-Fi
AUTO
NORMAL

For details, see "Beta HiFi selector" on page 15.

5 Press the ► button. Playing will begin.

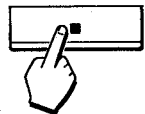
PLAY





Lights during playback of a Beta hi-fi recorded tape.

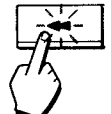
To stop playback
STOP



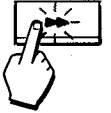
To eject the cassette
EJECT



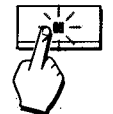
To rewind the tape
REW



To advance the tape rapidly
FF



To stop the playback momentarily
PAUSE



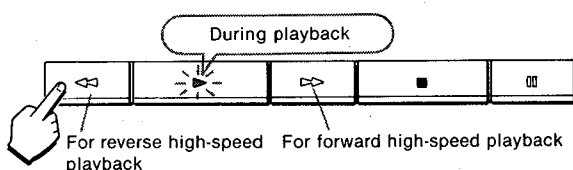
A still picture will be seen on the TV screen. To resume playback, press the button again. The pause mode will be automatically released after about 8 minutes and the playback will resume.

When the tape reaches the end during playback, it will be automatically rewound to the beginning.

PICTURE SEARCH

—Viewing the picture at high speed to find a particular scene

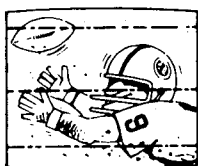
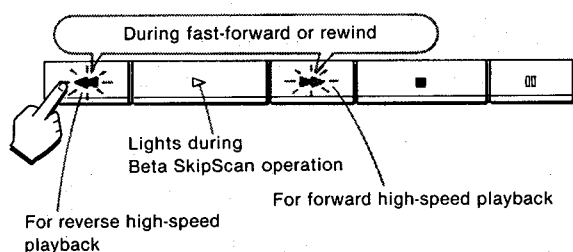
During playback, keep the ◀◀ or ▶▶ button pressed to reverse or advance the picture at high speed. Release the button at the desired point. Normal playback will resume. The picture search mode can also be assured directly from the pause mode.



SKIP SCAN

—Viewing the picture momentarily in the fast-forward or rewind mode

During rewind mode, keep the ◀◀ button pressed for high-speed picture reverse. During fast forward mode, keep the ▶▶ button pressed for high-speed picture advance. The picture appears momentarily while either of the buttons is pressed. Release the button at the desired point. Normal rewind or fast forward mode will resume.



Streaks will appear during the picture search, the skip scan and the pause modes.

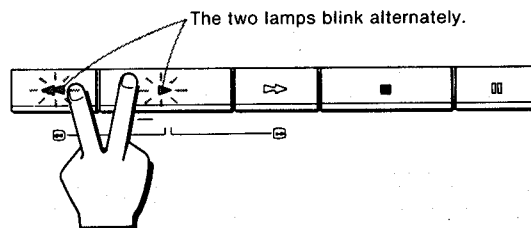
WHEN PLAYING BACK A TAPE RECORDED ON ANOTHER MACHINE

- A tape recorded on a machine without a Beta hi-fi system is played back in the conventional way.
- If streaks or snow appear during playback of a tape recorded on another recorder, adjust the TRACKING control for the best possible picture. Return the control to the centre position after playing back the tape.
- If the sound of a tape recorded on another Beta hi-fi recorder cannot be heard, adjust the TRACKING control.

AUTO PLAY

—To rewind the tape and automatically play it back

Press the ▶ button and ◀◀ button simultaneously in the stop mode. The lamps on these buttons blink alternately during rewinding. After the tape is completely rewound, it will be automatically played back.



SELECTION OF PLAYBACK SOUND

BETA Hi-Fi selector

Normally, set this selector to AUTO. The sound recorded on the video track of Beta hi-fi recorded tapes, or the sound recorded on the audio track of non-Beta hi-fi recorded tapes will automatically be played back. If you wish to listen to the sound recorded on the audio track of a Beta hi-fi recorded tape, set the selector to NORMAL. Return the selector to AUTO after playing back the tape.

Playback sound and Beta hi-fi lamp

	Beta hi-fi recorded tape	Non Beta hi-fi recorded tape
BETA Hi-Fi AUTO 	Sound on video track (Beta hi-fi recorded) 	Sound on audio track
NORMAL 	Sound on audio track 	Sound on audio track

*The Beta hi-fi lamp lights to show that a Beta hi-fi recorded tape is being played back.

TONE selector

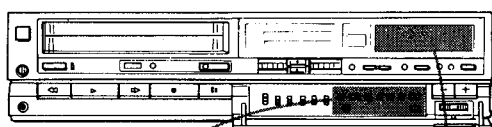
This selector is effective only with sound recorded on the audio track. Normally set the selector to HIGH. If the high frequencies of the playback sound seem exaggerated, set to LOW. Return the selector to HIGH after playing back the tape.

1-9. TIMER-ACTIVATED RECORDING OF TV PROGRAMMES

You can make one or two recordings within 7 days even when you are not at home. These recordings are identified as event 1 or event 2.

Note: The timer cannot be set during recording, playback, or when the INPUT SELECT switch is set to LINE/CAMERA (The "AU" appears on the display window).

Example: To record a PROG 2 broadcast from 9:00 AM to 11:25 AM on Friday for event 1.



1 Button to be pressed TIMER SET If the recorder is off, it will be turned on automatically.	Time display The segment to be set will blink. Turn-on indication Shows the event number. Event 1 always appears first.
2 Select the turn-on day. DAY Indication changes as follows : 1234567 (everyday) → 1 (Monday) → 2 (Tuesday)... → 7 (Sunday)	
3 Set the turn-on time. H 10M M	
4 Select the programme to be recorded. PROG For a bilingual programme, select A B the language to be recorded. BILINGUAL	

Check before setting the timer

- Is the clock set to the correct day and correct time? Timer setting can only be made after the clock has been set.
- Is a cassette inserted in the recorder?
- Is the cassette long enough to record the programmes?
- Does the cassette have a safety tab on the bottom?
- Is the INPUT SELECT switch set to TUNER?

5 TIMER SET	Turn-off indication Blinks.
6 Set the turn-off time. H 10M M	
7 TIMER REC TIMER REC ON/OFF The TIMER REC lamp lights up and the power is turned off. At the preset turn-on time, recording will start automatically and will stop at the preset turn-off time. If the inserted cassette is at its end or does not have the safety tab, the cassette will be automatically ejected.	Present day and time TIMER REC

ONCE THE TIMER REC LAMP HAS LIT UP, NO FUNCTION OF THE RECORDER CAN BE ACTIVATED, except for checking the timer setting.

To operate the recorder after setting the timer for recording, press the TIMER REC button so that the TIMER REC lamp goes off. To reactivate the timer recording standby mode, be sure to press the TIMER REC button again.

To record to the end of the tape

Set the turn-off time to a time after the tape will reach its end.

If the tape reaches the end during the timer recording

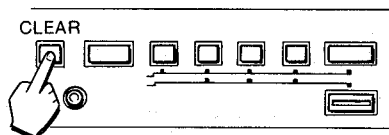
The recording will stop and the tape will be rewound to the beginning. Then after about a second, the recorder will be turned off.

To stop the on-going timer recording

Press the TIMER REC button so that the TIMER REC lamp goes off. The unit will be turned off automatically after about a second.

To erase the setting of an event

- 1 Press the TIMER SET button to display the event to be erased.
- 2 Press the CLEAR button. This event will be erased from the memory.



When a power interruption occurs before or during timer recording

If the clock shows "0:00" and the dots blink

All the timer settings have been erased. Reset the clock time and the timer settings.

If the clock still shows the correct time but the dots blink

The power has been interrupted for less than 3 minutes. The timer programmes are retained in the memory and the on-going timer recording will resume when the power is resupplied.

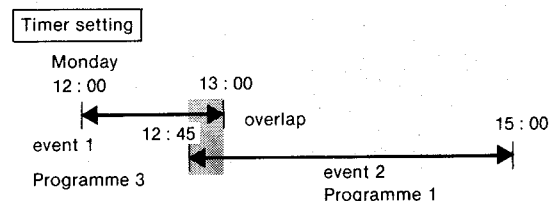
To stop the blinking, press any button in the timer-setting compartment.

ERROR INDICATIONS

If the ● and ○ indications as well as the event numbers blink when the TIMER REC button is pressed...

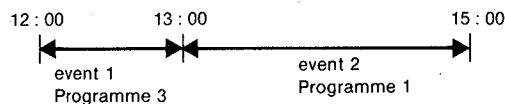
It means that the setting of these events overlap. Check the settings and eliminate the overlap.

Example :



Even with this error indication, recording can be made. In this case, the first preset recording continues to its turn-off point and then the next recording begins.

Realized recording



If the turn-on time of the 2 events is the same, recording of event 1 will be made.

TO CHECK THE TIMER SETTING

Press the TIMER SET button. Each time you press the button, the indication will change as follows :

Example : Both event 1 and 2 have been programmed.

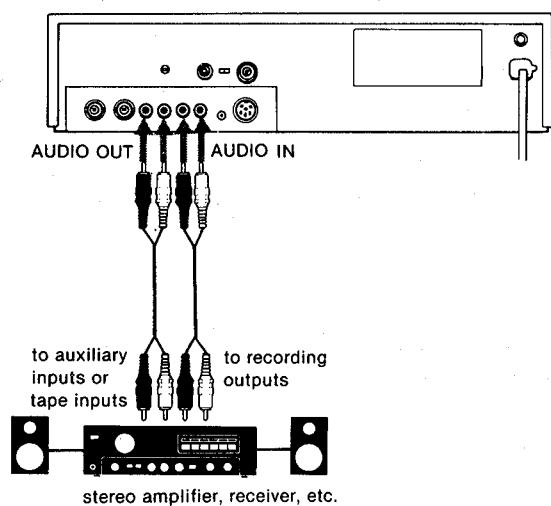
Turn-on day and time of event 1 → Turn-off day and time → Turn-on day and time of event 2 → Turn-off day and time → Present time

During actual timer recording, only the turn-off time of the event being recorded can be checked.

1-10. BETA HI-FI AUDIO RECORDING

You can record only audio signals without recording pictures.

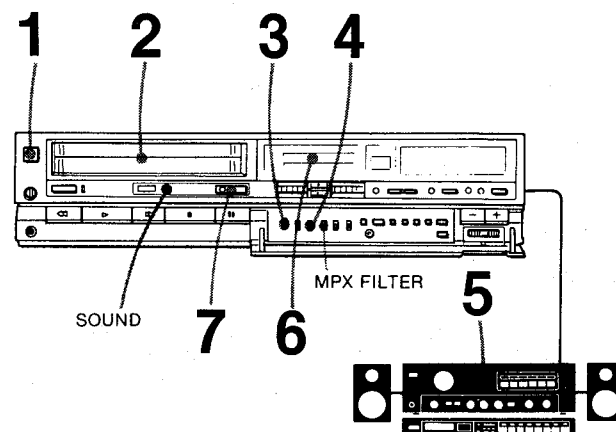
CONNECTION TO AN AUDIO SYSTEM



Note

When the TV aerial input socket is connected to the recorder AERIAL OUT socket, the recorded TV programme's sound may not be heard if pictures are not recorded on the tape. Listen to the sound through the equipment connected to the AUDIO OUT jacks.

TO RECORD FROM THE AUDIO SYSTEM



- 1 Press the ON/STANDBY button.
- 2 Insert a cassette.
- 3 Set the INPUT SELECT switch to LINE/CAMERA.
- 4 Set the RECORD mode selector to SOUND. The SOUND lamp lights to show audio recording.
- 5 Turn the power on and play the programme source to be recorded.
- 6 Set the LEVEL METER switch to ON, and adjust the recording level with the REC LEVEL controls. (See "RECORDING LEVEL ADJUSTMENT" on page 19.)
- 7 Press the RECORD button. Recording will begin.

MPX FILTER (multiplex) switch

When recording from an FM tuner, set this switch to ON to cut off the high-frequency signals which sometimes grate on the ear. To record without cutting the high frequencies, set this switch to OFF.

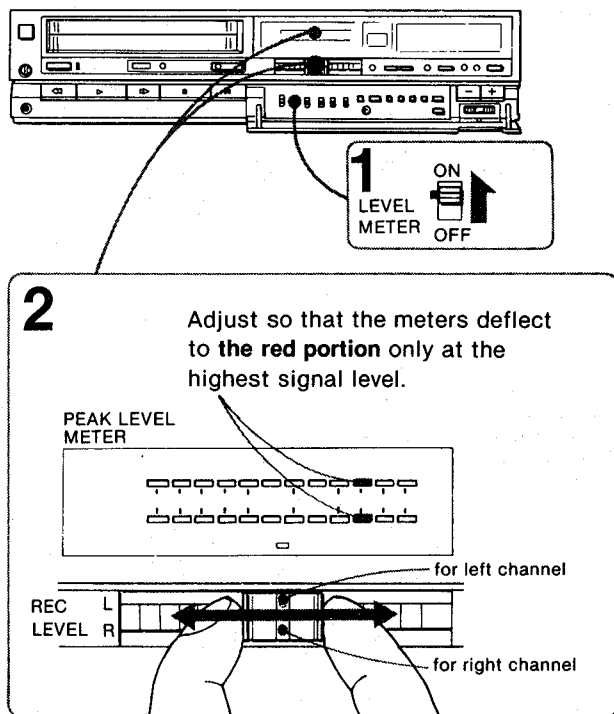
RECORDING LEVEL ADJUSTMENT

When recording on the Beta hi-fi system, the recording level of the left and right channels can be adjusted with the REC LEVEL controls.

In most cases, when you record TV programme sound, the proper recording level is obtained by setting the REC LEVEL controls at 5 (green position).

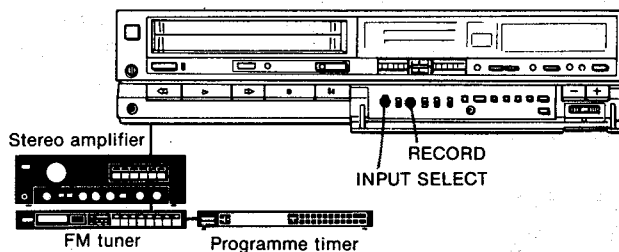
When you record a sound source with a wide dynamic range, manually adjusting the recording level may result in a better recording.

If the recording level setting is too high, the sound will be distorted, and if the setting is too low, a noisy recording will result. The recording level should be set as high as possible while avoiding distortion.



TIMER-ACTIVATED AUDIO RECORDING

Use an optional programme timer for turning on/off the audio system.



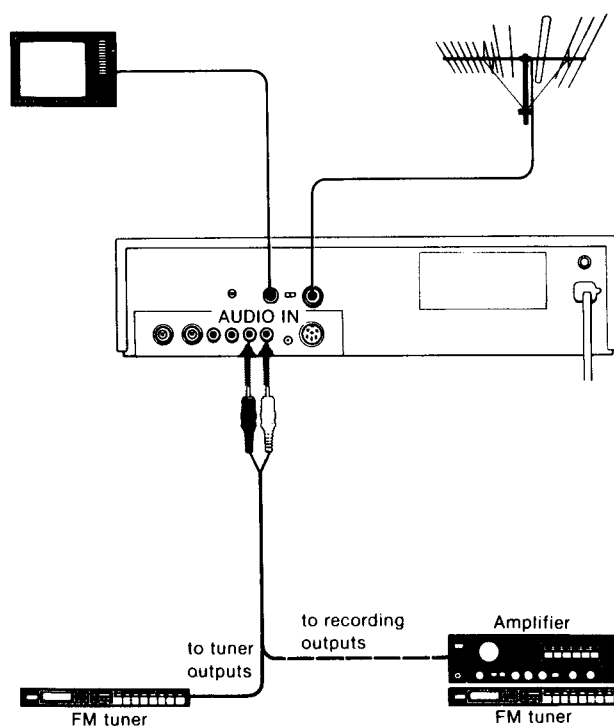
- 1 Make sure that the clock built into the recorder and the programme timer clock are set to the correct day and time.
- 2 Set the INPUT SELECT switch of the recorder to SIMUL.
- 3 Set the RECORD mode selector to SOUND.
- 4 Preset the turn-on day and time, and the turn-off time in both timers.
For presetting the recorder timer, see page 16.

At the preset turn-on time, audio recording will start automatically and will stop at the preset turn-off time.

FM SIMULCAST RECORDING

By connecting an FM tuner to the AUDIO IN jacks when a TV aerial is connected, you can record the FM simulcast TV programmes (stereo sound transmitted from an FM radio station) while recording the TV programme pictures (video signals) from the TV aerial inputs.

Connection



Recording

- 1 Tune in the station you wish on the recorder and the FM tuner.
- 2 Set the INPUT SELECT switch on the recorder to SIMUL.
- 3 Start recording.

Note

Be sure to return the INPUT SELECT switch to TUNER after recording FM simulcast TV programmes. When the switch is set to SIMUL, the sound of TV programmes cannot be recorded.

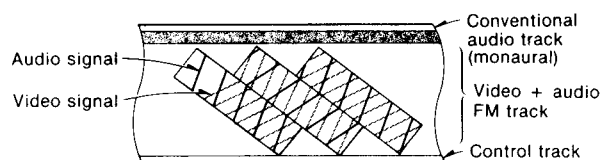
What is Beta hi-fi PAL recording?

In conventional recording, audio signals are recorded on the audio track and the video signals on the video track. On Beta hi-fi recording, audio signals are recorded on the video track together with the video signals.

In this recorder's Beta hi-fi PAL system, audio signals are recorded first, using the 2 audio heads, then video signals are recorded over the audio signals with an azimuth offset, using the 2 video heads.

Beta hi-fi audio signals are frequency-modulated and recorded on 2 channels, so you can record a stereo or bilingual programme with sound clearly superior to that of a conventional audio recording.

Beta hi-fi PAL recording pattern on the video tape

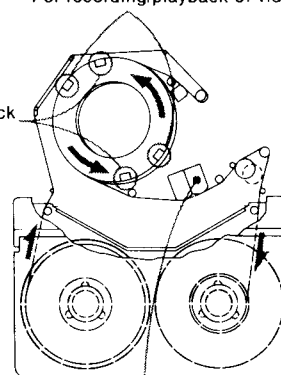


Video heads

For recording/playback of video signals

Audio heads

For recording/playback of Beta hi-fi audio signals



Audio/control heads

For recording/playback of conventional audio signals and control signals.

Beta hi-fi recording on SL-HF100ES

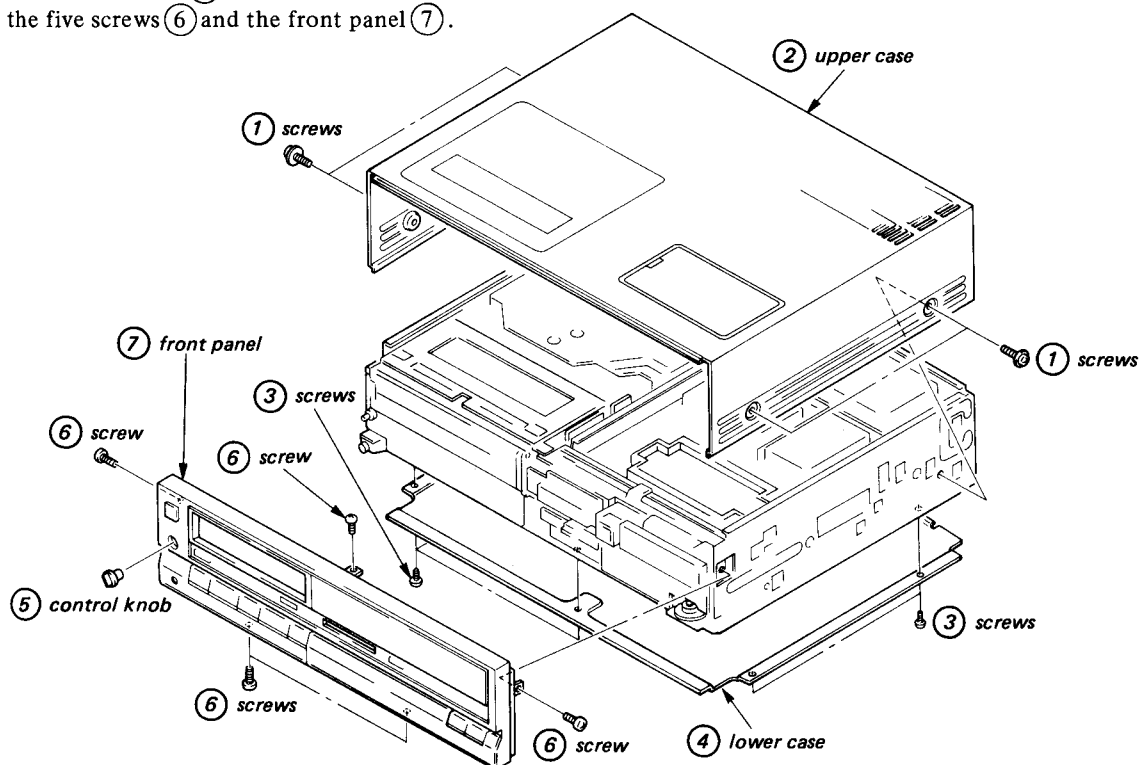
This recorder simultaneously records audio signals on the video track (Beta hi-fi recording) and on the conventional audio track (in monaural), so that tapes recorded with this recorder can be played back on an ordinary video cassette recorder without a Beta hi-fi system.

For playback, see "BETA Hi-Fi selector" on page 15.

SECTION 2 DISASSEMBLY

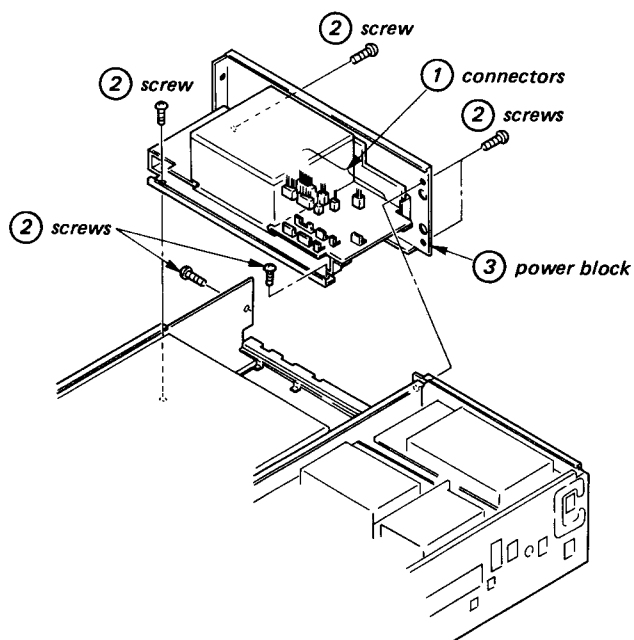
2-1. CASE AND FRONT PANEL REMOVAL

- 1) Remove the four screws (1).
- 2) Remove the upper case (2).
- 3) Remove the six screws (3) and the lower case (4).
- 4) Remove the control knob (5).
- 5) Remove the five screws (6) and the front panel (7).



2-2. POWER BLOCK REMOVAL

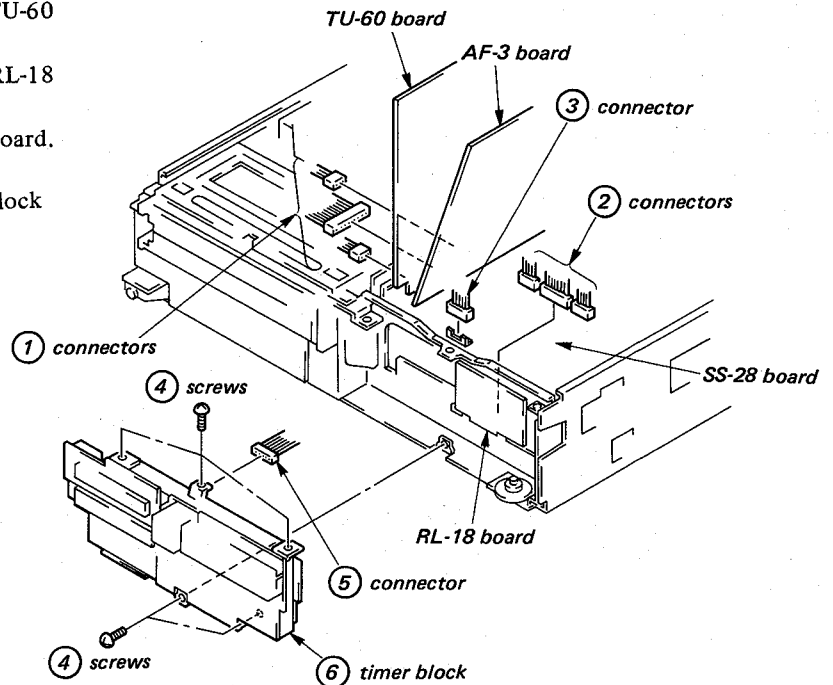
- 1) Pull out the seven connectors (1).
- 2) Remove the six screws (2).
- 3) Remove the power block (3).



2-3. TIMER BLOCK REMOVAL

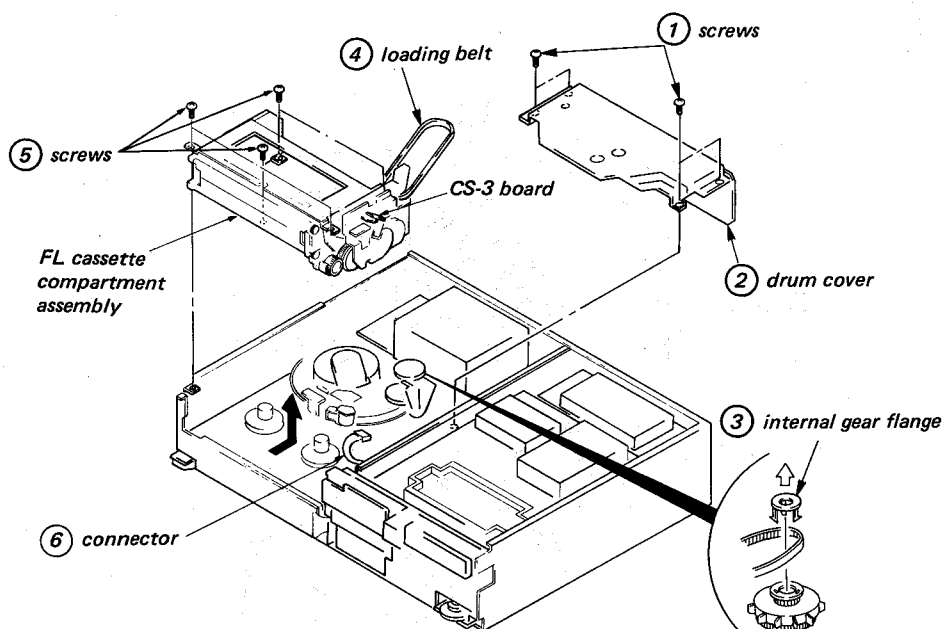
- 1) Pull out the three connectors ① from the TU-60 board.
- 2) Pull out the three connectors ② from the RL-18 board.
- 3) Pull out the connector ③ from the SS-28 board.
- 4) Remove the five screws ④.
- 5) Pull out the connector ⑤ from the timer block side (TM-54 board).
- 6) Remove the TM block ⑥.

TU-60 board (CN003, 101, 102)
 RL-18 board (CN801, 802, 803)
 SS-28 board (CN602)
 TM-54 board (CN104)



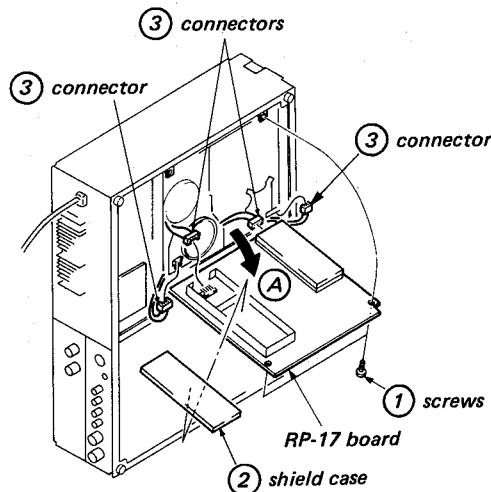
2-4. FL CASSETTE COMPARTMENT ASSEMBLY REMOVAL

- 1) Remove the four screws ① and the drum cover ②.
- 2) Remove the internal gear flange ③.
- 3) Loosen the loading belt ④ exerting a force on the threading motor.
- 4) Remove the five mounting screws ⑤ of the FL cassette compartment.
- 5) Pull out the connector ⑥ from the CS-3 board.
- 6) Lift the FL cassette compartment assembly in the direction shown by the arrow to remove.



2-5. REMOVAL OF MECHANICAL CHASSIS BLOCK (1)

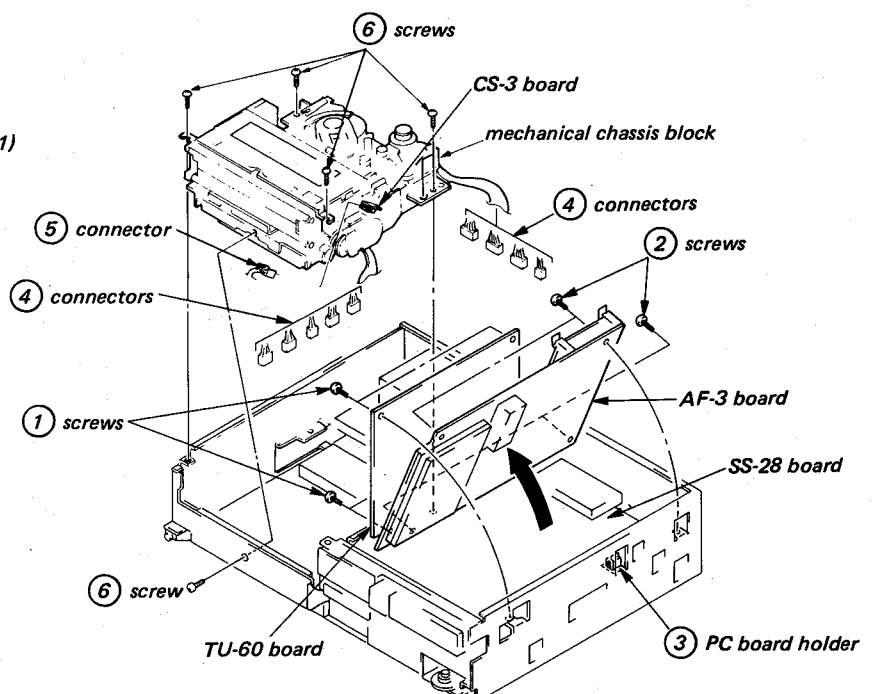
- 1) Stand the set with the right side panel on the bottom.
- 2) Remove the two screws (1) holding the RP-17 board.
- 3) Remove the RP-17 board in the direction shown by the arrow (A).
- 4) Remove the shield case (2).
- 5) Pull out the four connectors (3).



2-6. REMOVAL OF MECHANICAL CHASSIS BLOCK (2)

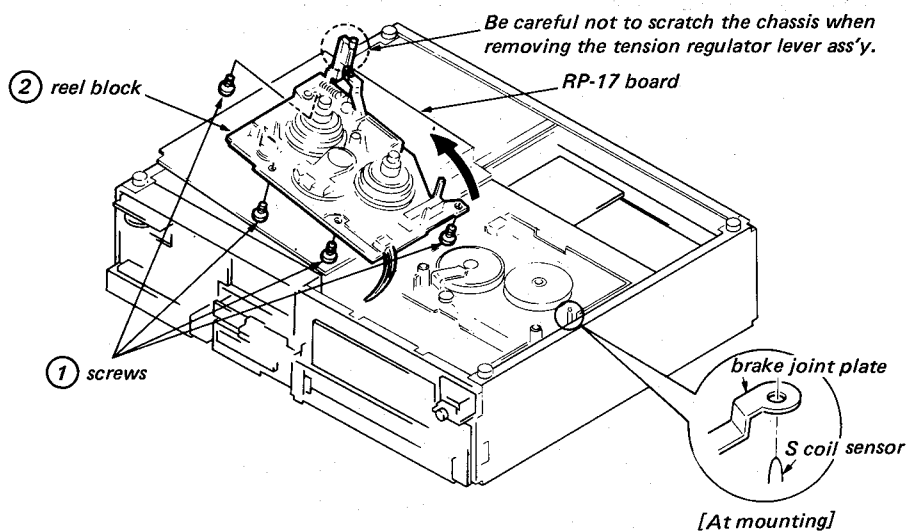
- 1) Remove the four screws (1) and the TU-60 board in the direction shown by the arrow.
- 2) Remove the four screws (2).
- 3) Remove the claw of PC board holder (3) and the AF-3 board in the direction shown by the arrow.
- 4) Pull out the thirteen connectors (4) from the SS-28 board and pull out the rest one from AM-5 board.
- 5) Pull out the connector (5) from CS-3 board.
- 6) Remove the six screws (6) and the mechanical chassis block.

SS-28 board (CN001, 002, 004, 301, 303, 307, 603, 604, 605, 607, 608, 610, 611)
 AM-5 board (CN503)
 CS-3 board (CN301)



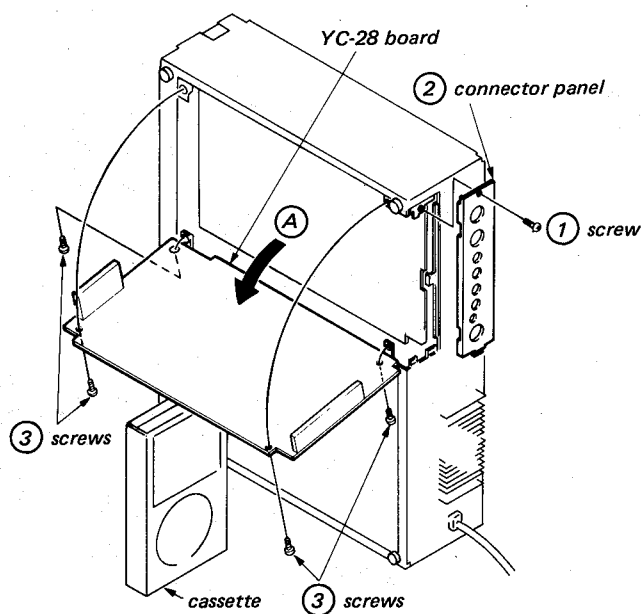
2-7. REEL ASS'Y REMOVAL

- 1) Place the set upside down.
- 2) Remove the four screws (1).
- 3) Remove the reel block (2).



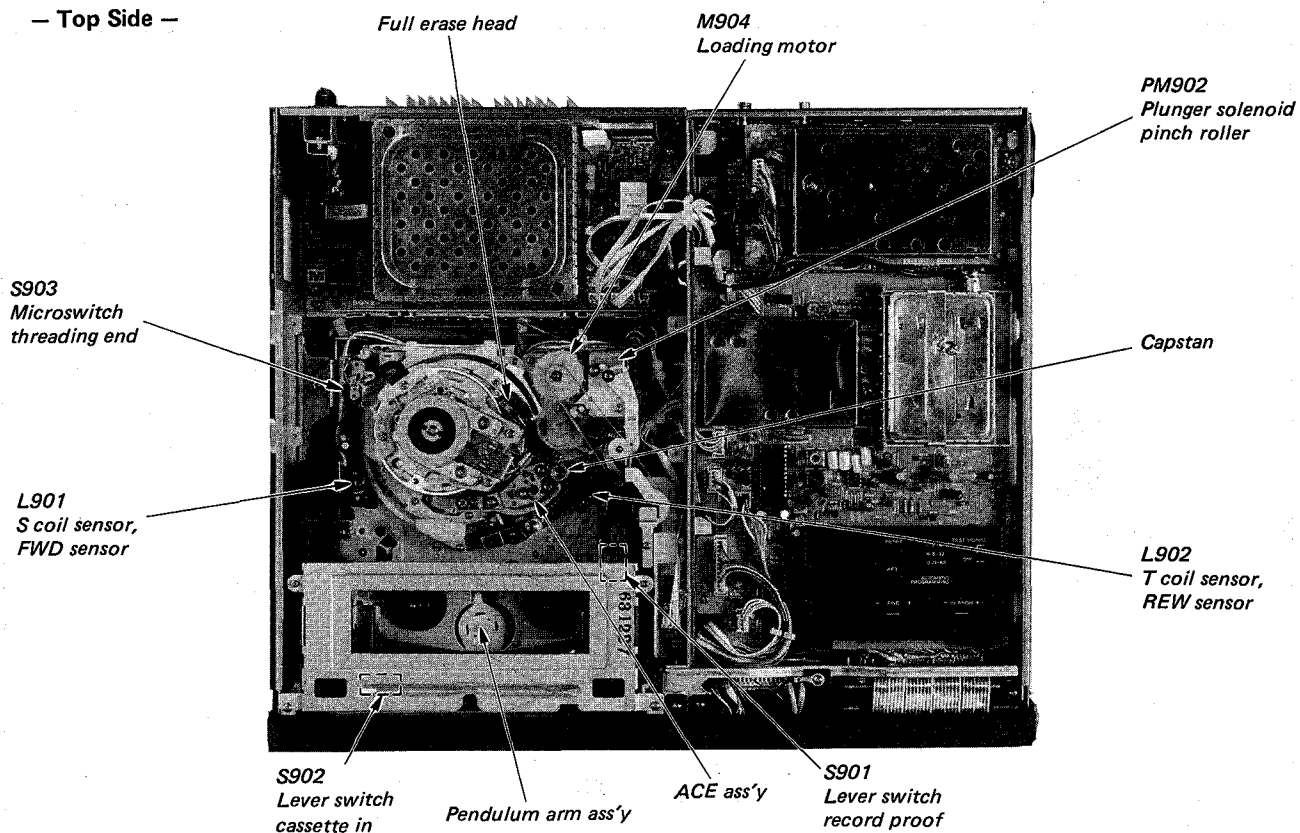
2-8. THE YC-28 BOARD REMOVAL

- 1) Stand the set with the left side panel on the bottom.
- 2) Remove the screw (1) and the connector panel (2).
- 3) Remove the four screws (3) holding the YC-28 board.
- 4) Swing open the YC-28 board in the direction shown by the arrow (A) and rest it on a cassette.

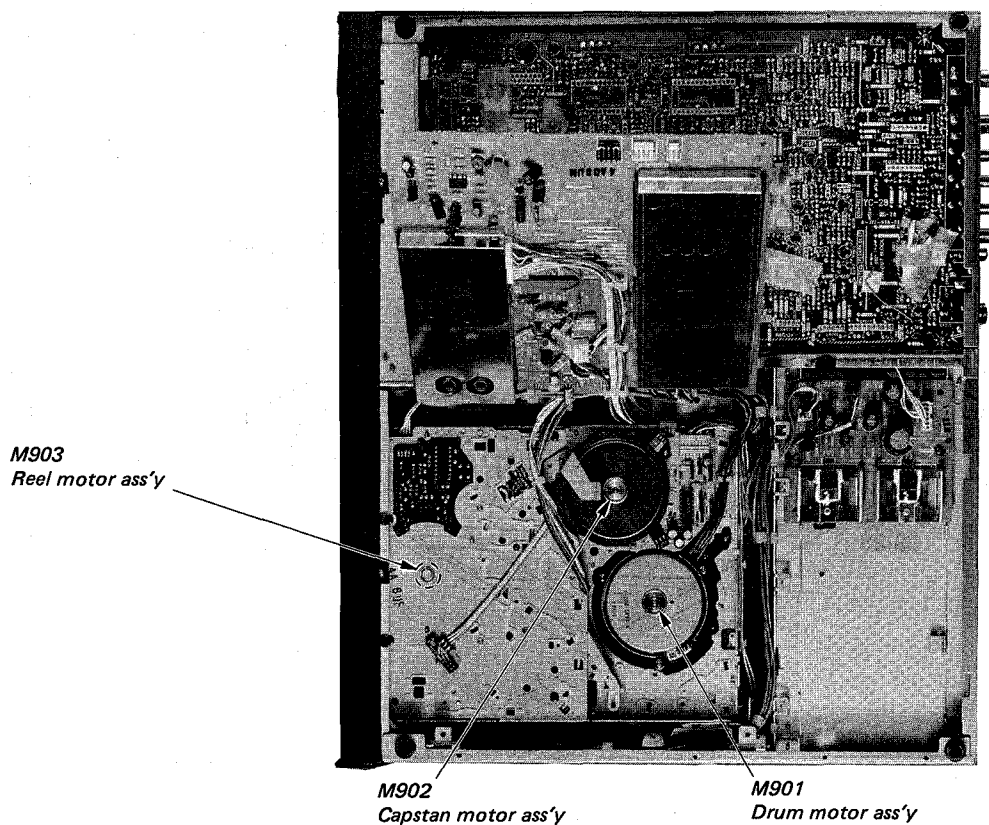


2-9. INTERNAL VIEW

— Top Side —

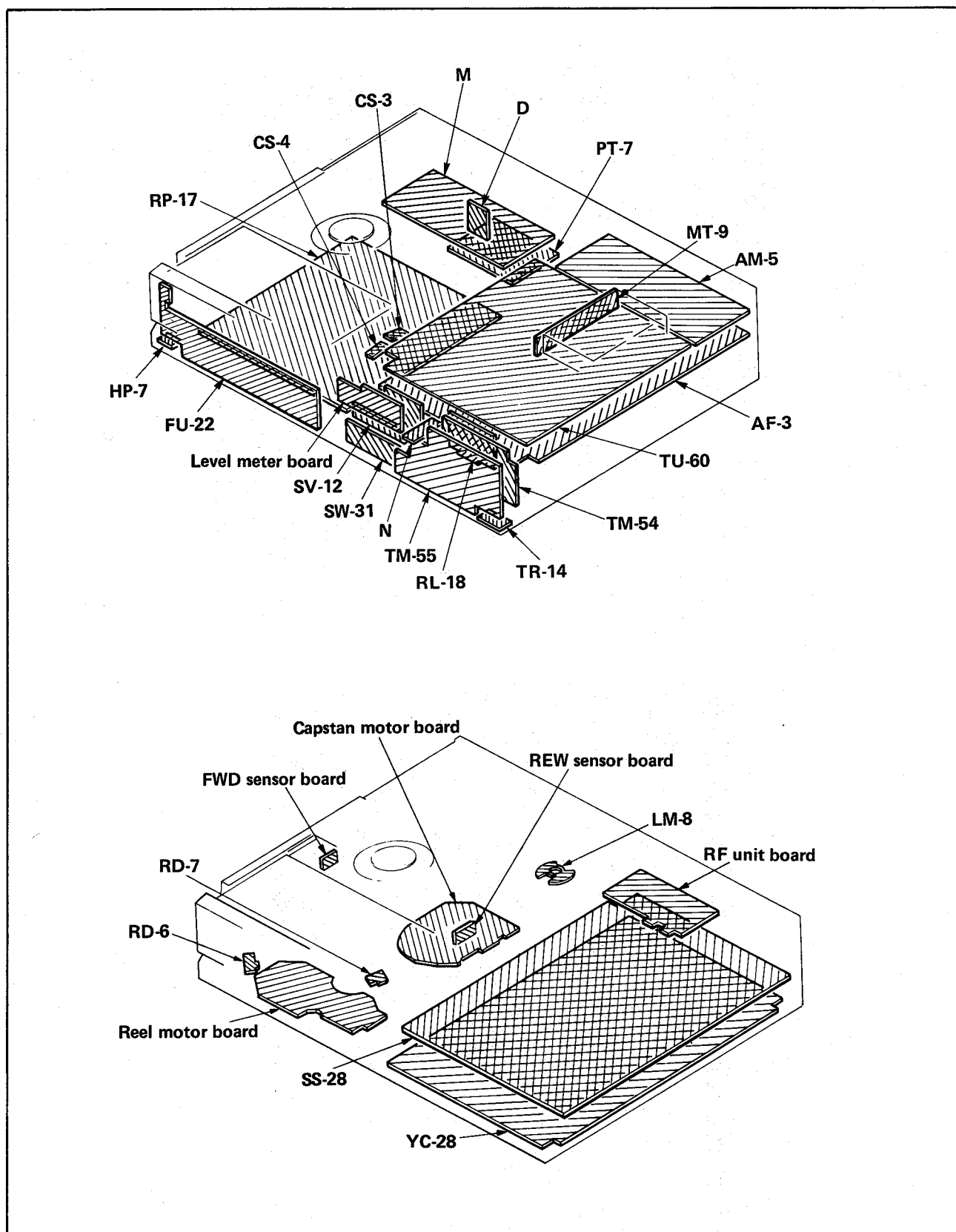


— Bottom Side —

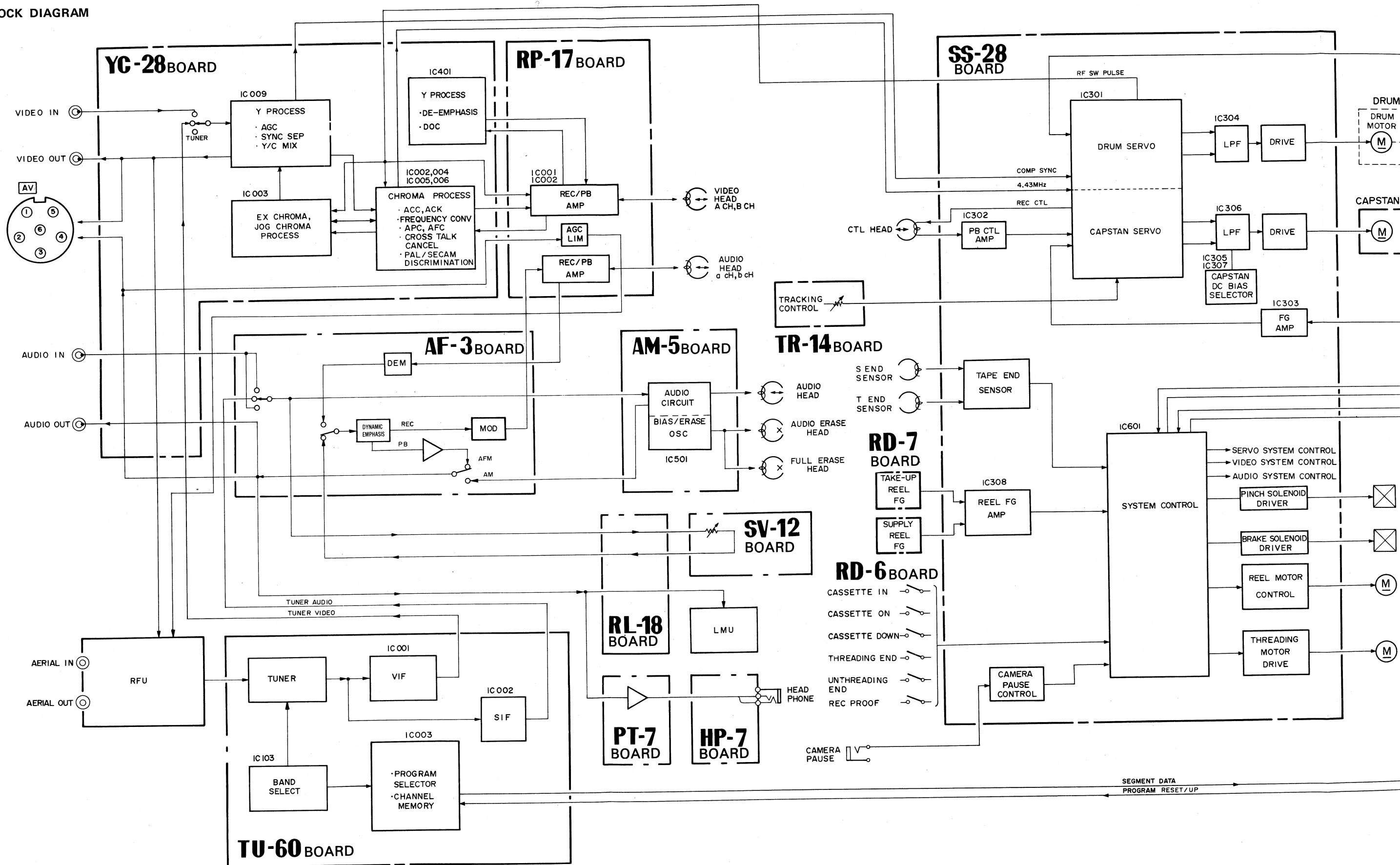


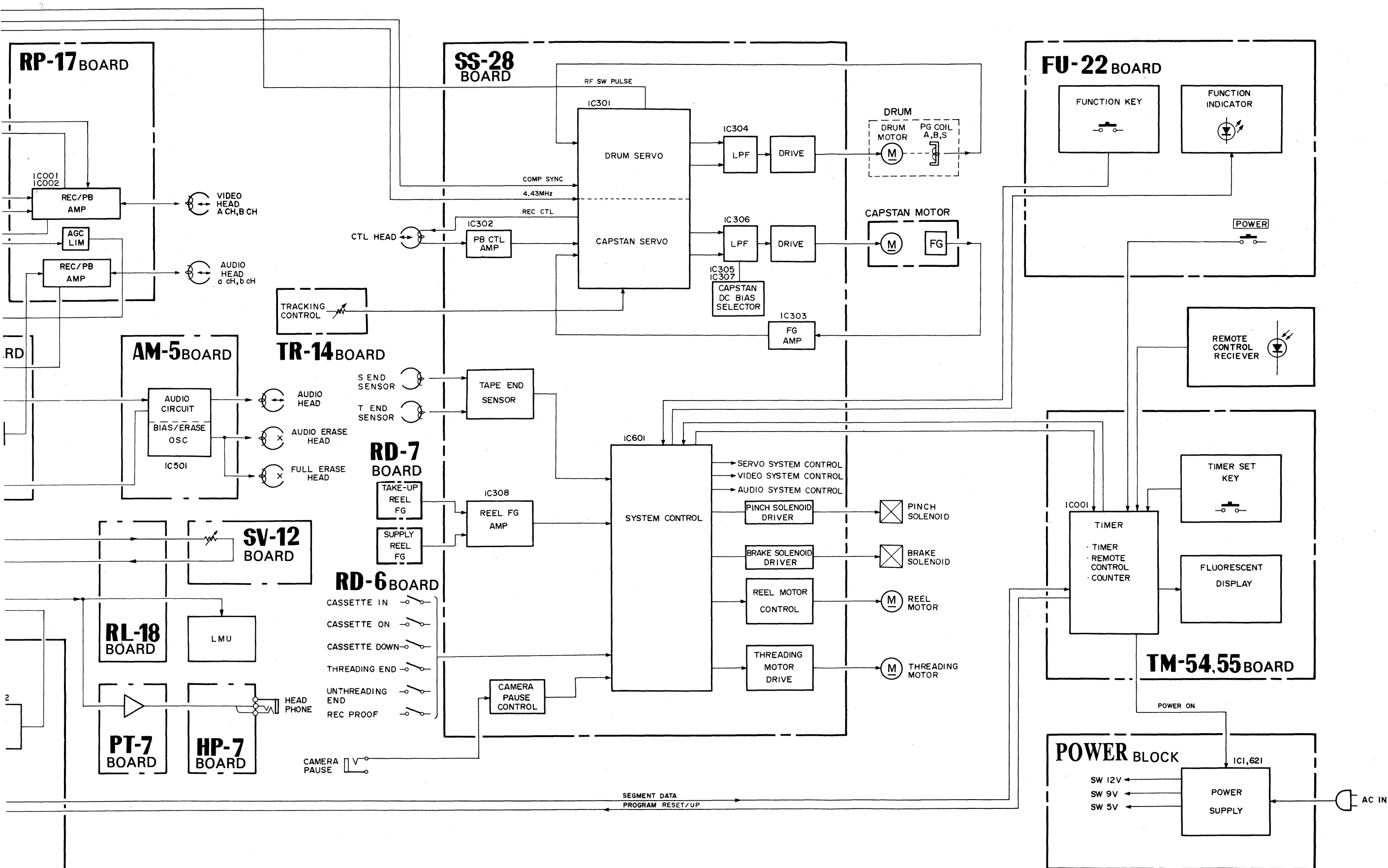
SECTION 3 DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

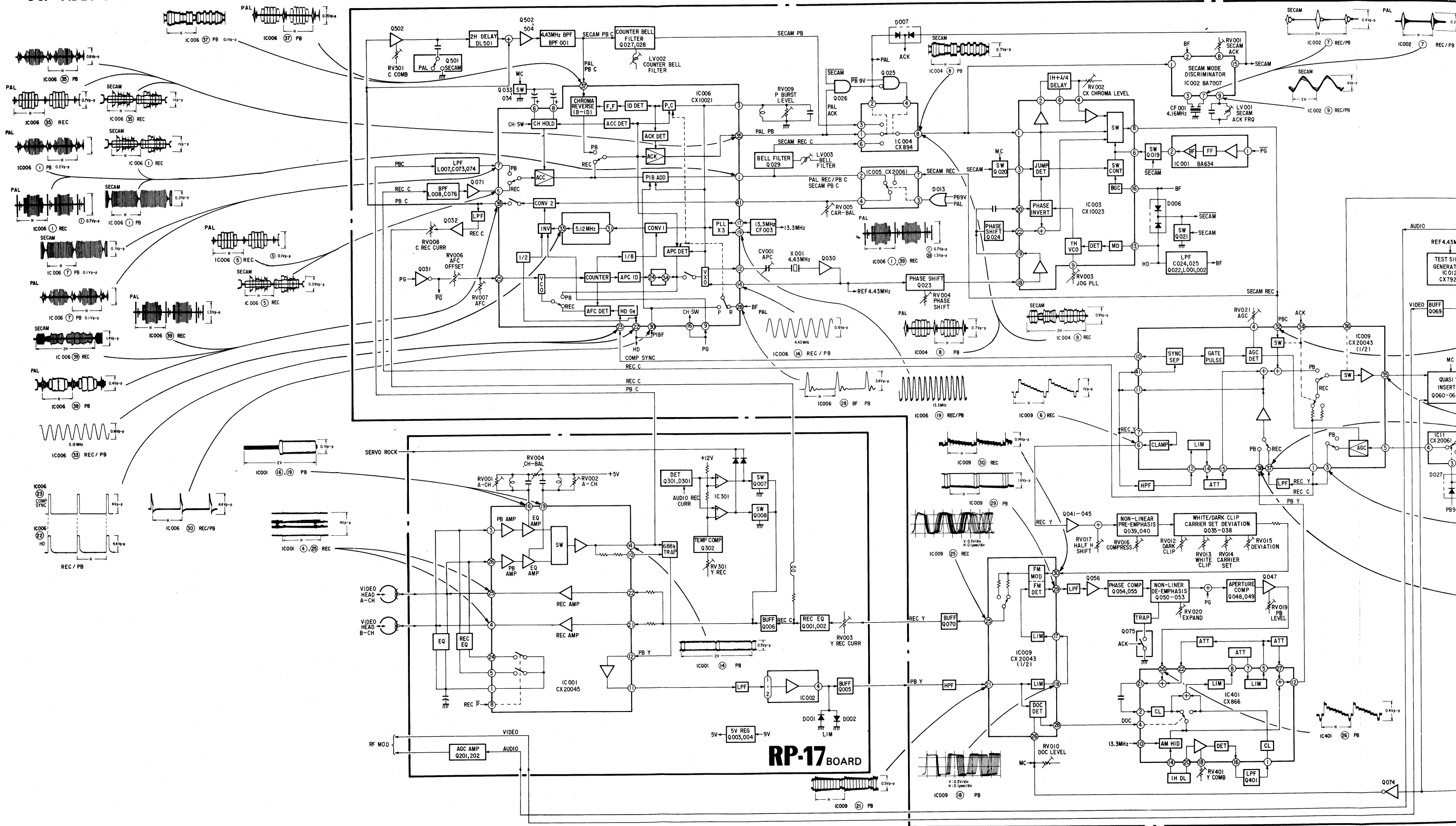


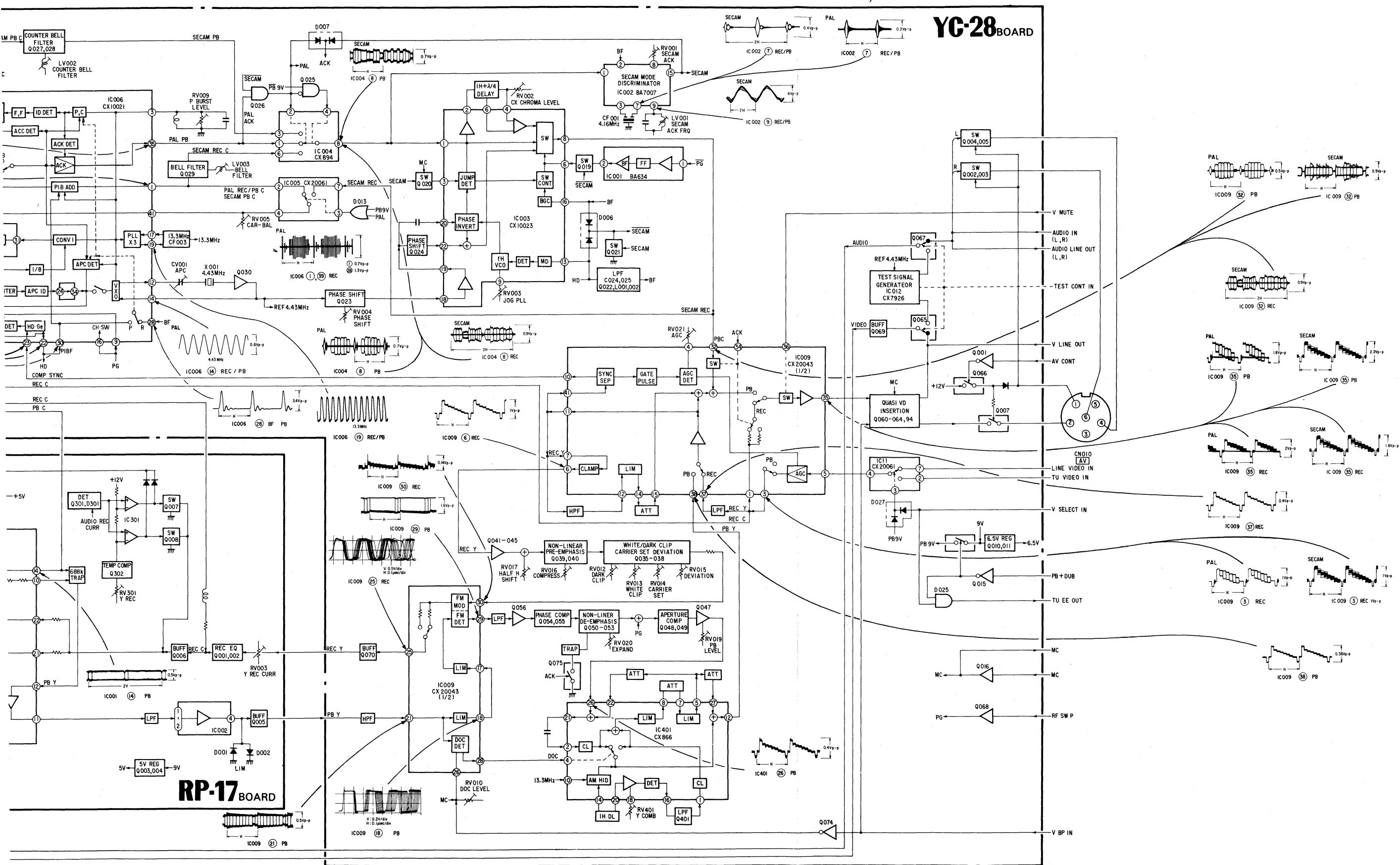
3-2. OVERALL BLOCK DIAGRAM



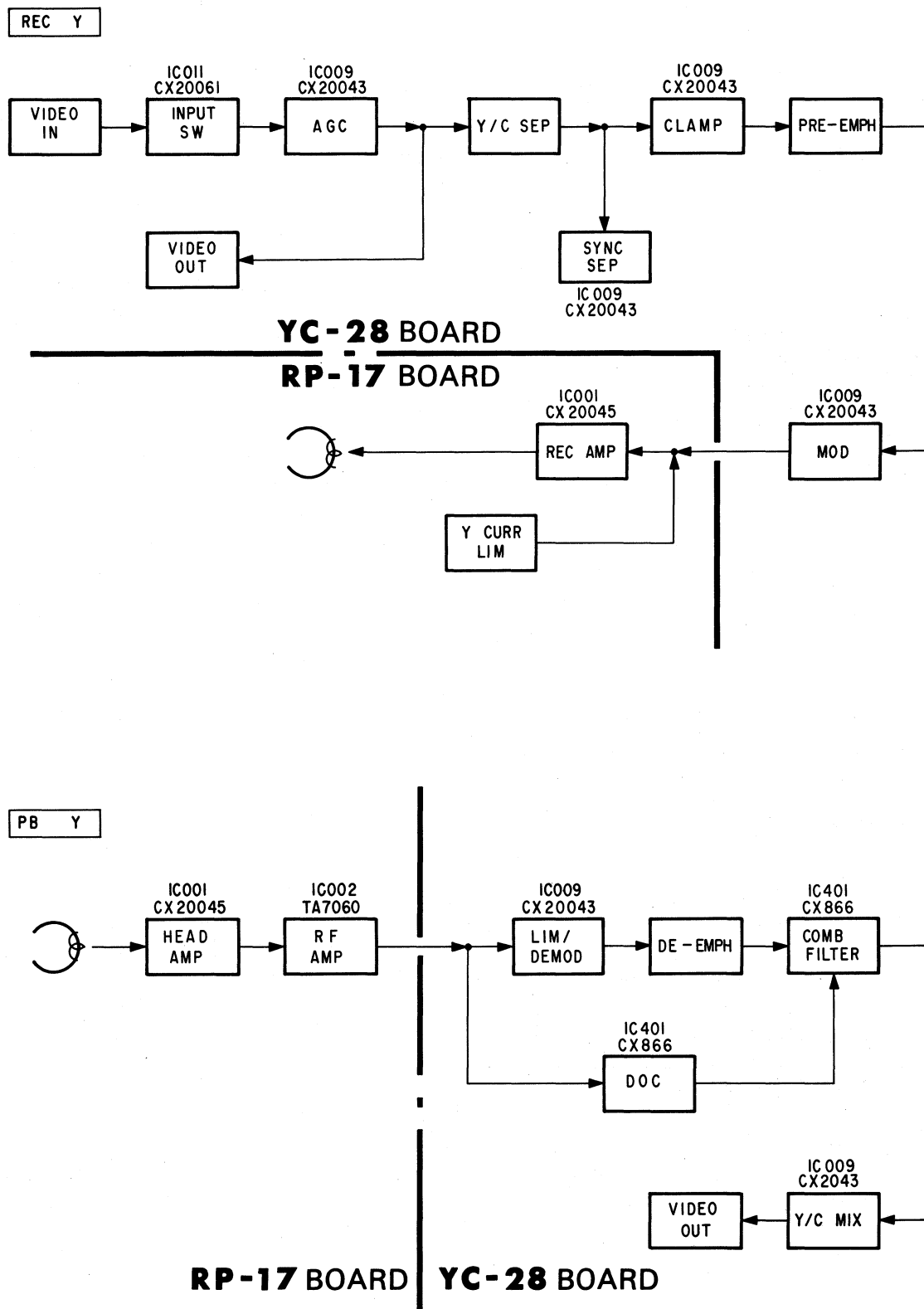


3-3. VIDEO SYSTEM BLOCK DIAGRAM

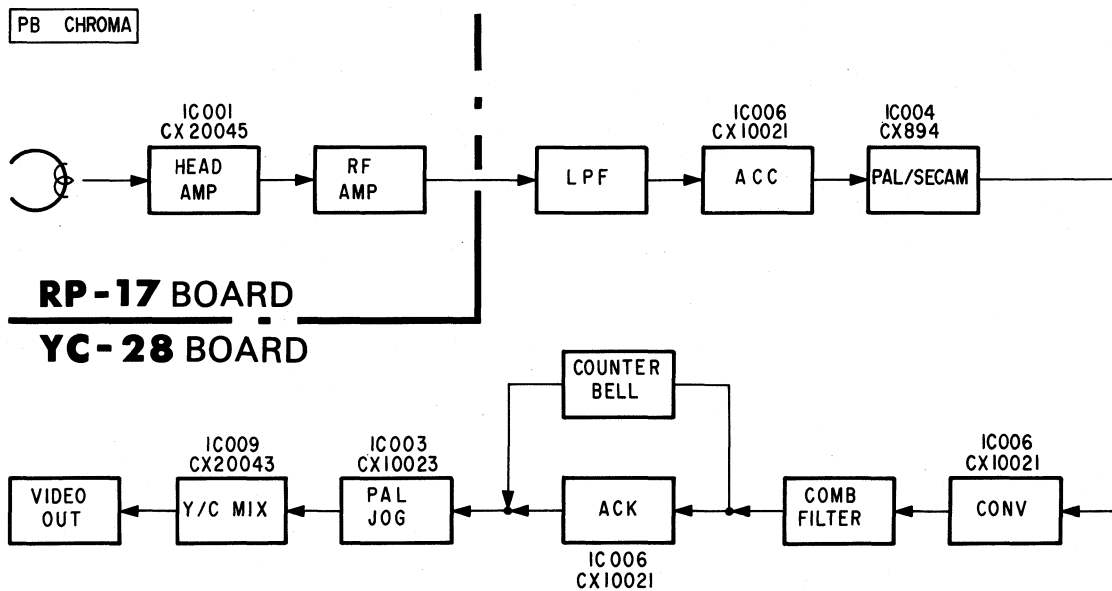
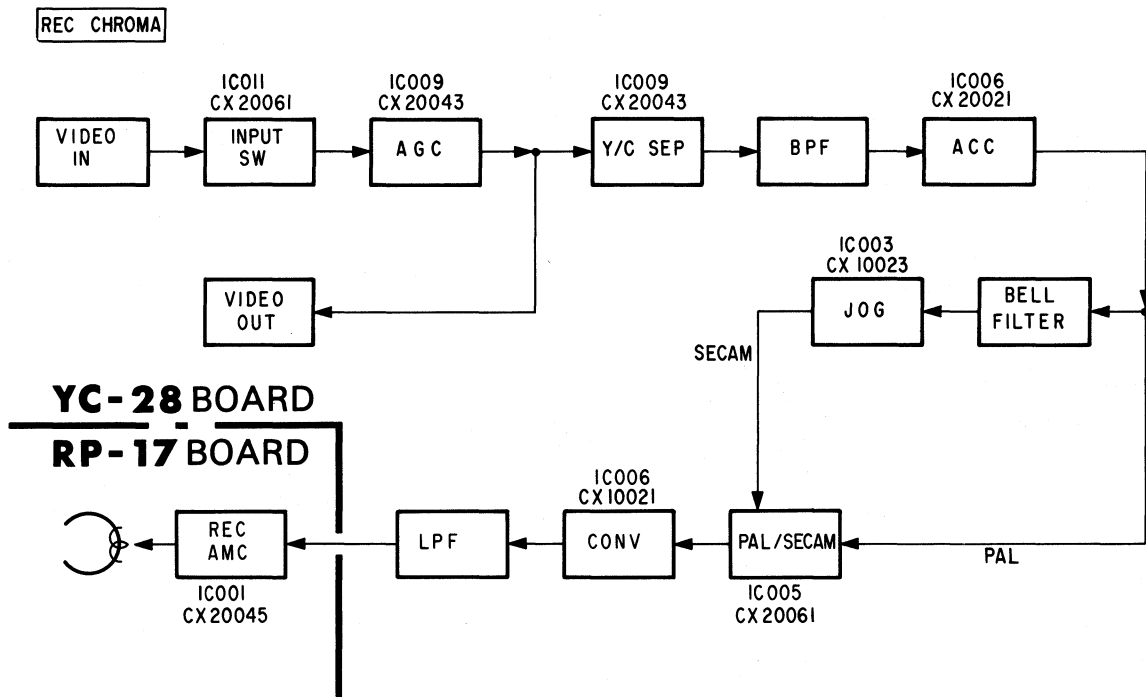




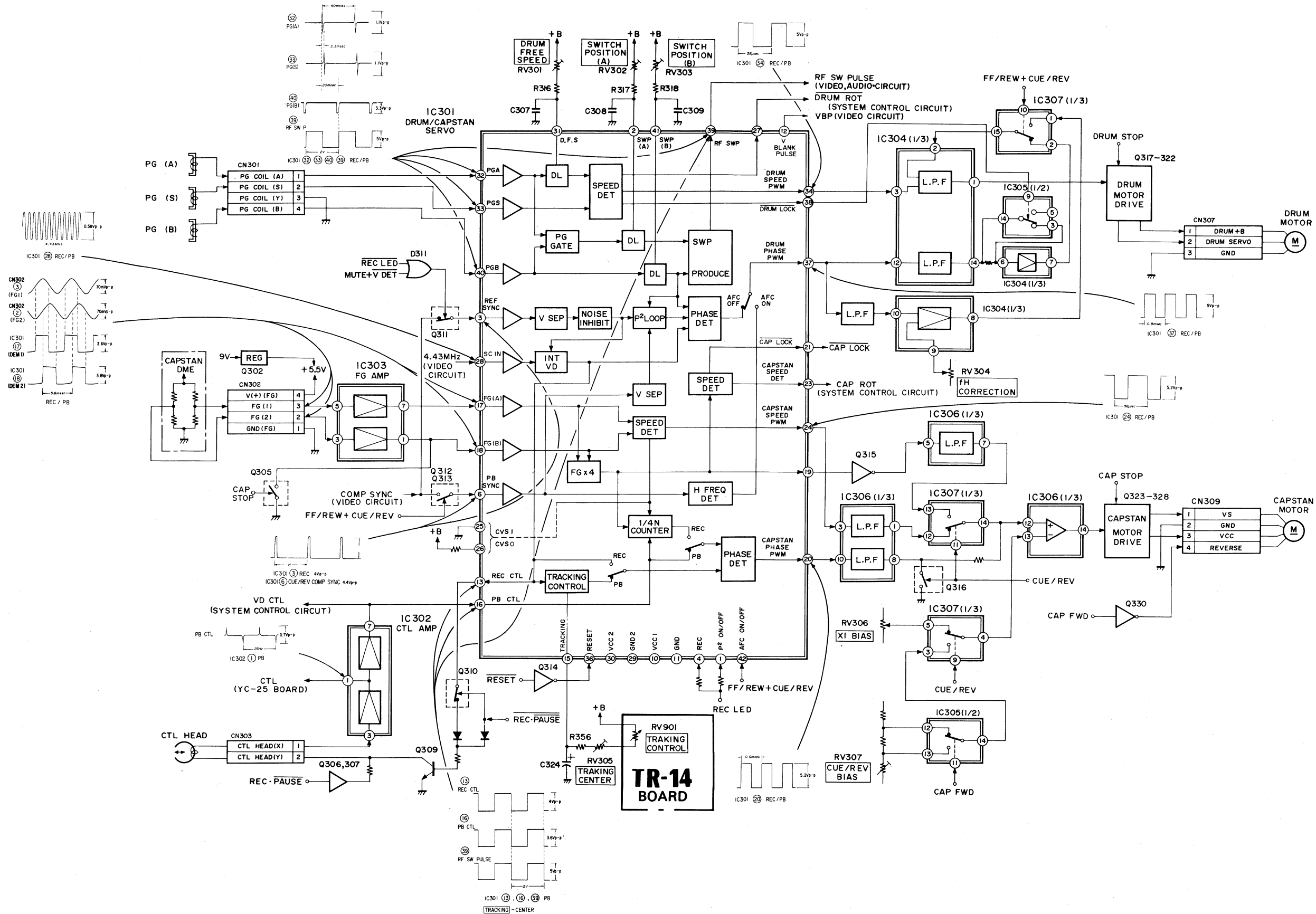
3-4. VIDEO Y BLOCK DIAGRAM



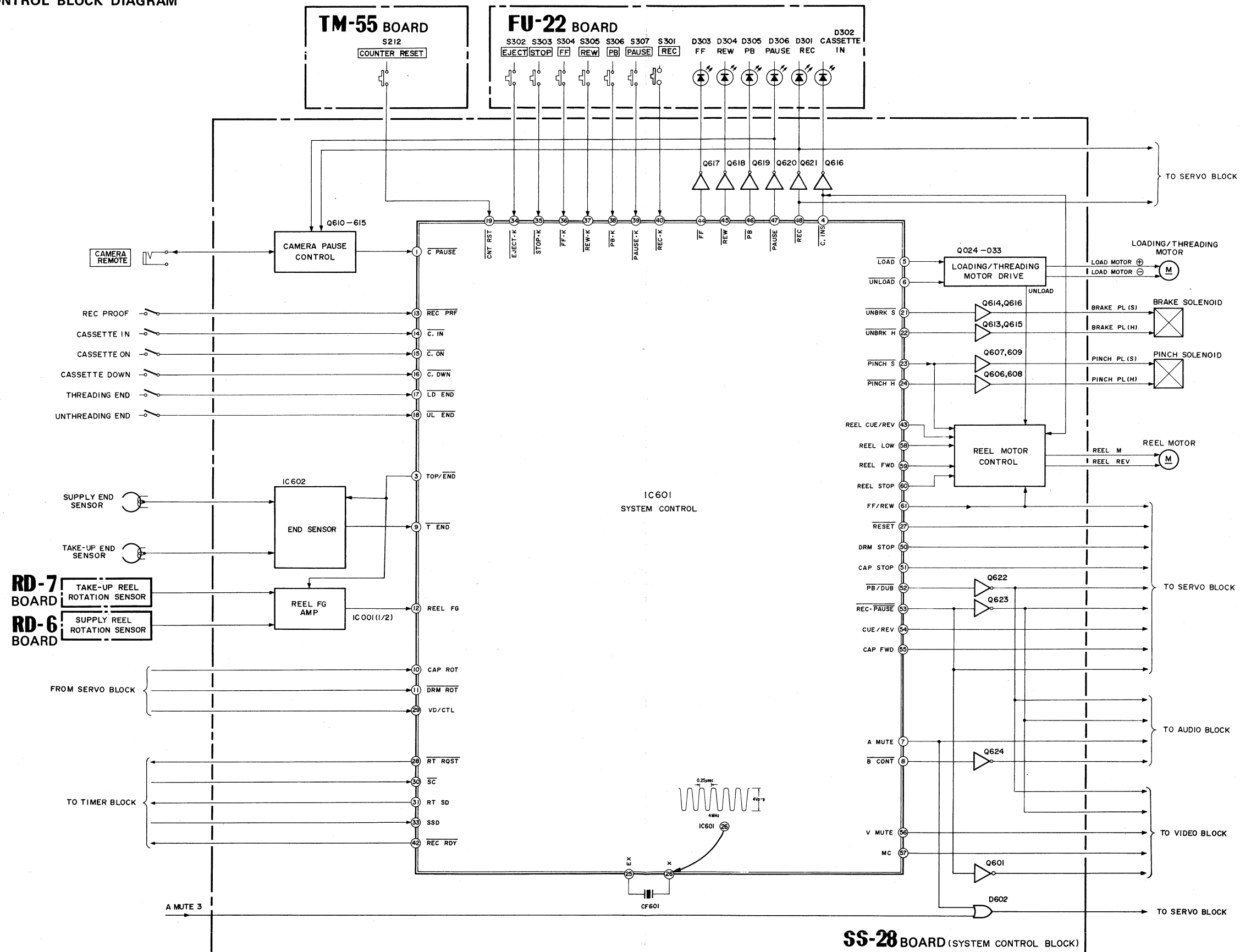
3-5. VIDEO CHROMA BLOCK DIAGRAM



3-6. SERVO SYSTEM BLOCK DIAGRAM



3-7. SYSTEM CONTROL BLOCK DIAGRAM



3-8. SYSTEM CONTROL CIRCUIT AND MECHANISM BLOCK INTERFACE

MODE			EJECTED	LOADING	THREADING	STOP	UN- THREADING	UN- LOADING	FF	REW	PB	PB· PAUSE	PICTURE SEARCH		REC	REC· PAUSE	TIMER REC	FR SEARCH	
SIGNAL	I/O	Pin No.											CUE	REV				CUE	REV
REC PROOF	I	IC601 13pin	H	H	H/L	H/L	H/L	H	H/L	H/L	H/L	H/L	H/L	H/L	L	L	L	H/L	H/L
C·IN	I	IC601 14pin	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
C·ON	I	IC601 15pin	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
C·DWN	I	IC601 16pin	H	H	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L
LD END	I	IC601 17pin	H	H	H	L	H	H	L	L	L	L	L	L	L	L	L	L	L
UL END	I	IC601 18pin	L	L	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H
UNBRK S	O	IC601 21pin	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
UNBRK H	O	IC601 22pin	H	H	L	H	L	H	L	L	L	H	L	L	L	H	L	L	L
PINCH S	O	IC601 23pin	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PINCH H	O	IC601 24pin	H	L	H	H	H	L	H	H	L	H	L	L	L	H	L	H	H
LOAD	O	IC601 5pin	H	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H
UNLOAD	O	IC601 6pin	H	H	H	H	L	L	H	H	H	H	H	H	H	H	H	H	H

3-9. SYSTEM CONTROL CIRCUIT AND REMOTE CONTROL/TIMER CIRCUIT INTERFACE

MODE			STOP	FF	REW	PB	PB· PAUSE	PICTURE SEARCH		REC	REC· PAUSE	TIMER REC	FR SEARCH	
SIGNAL	I/O	Pin No.						CUE	REV				CUE	REV
RT RQST	I	IC601 28pin												
RTSD	I	IC601 31pin												
COUNTER RESET	I	IC601 19pin												
SSD	O	IC601 33pin												
SC	O	IC601 30pin												
REC READY	O	IC601 42pin	H/L	H	H	H	H	H	H	H	H	L	H	H

3-10. SYSTEM CONTROL CIRCUIT AND I/O

MODE			ST
SIGNAL	I/O	Pin No.	
EJECT·K	I	IC601 34pin	F
STOP·K	I	IC601 35pin	F
FF·K	I	IC601 36pin	F
REW·K	I	IC601 37pin	F
PB·K	I	IC601 38pin	F
PAUSE·K	I	IC601 39pin	F
REC·K	I	IC601 40pin	F
FF	O	IC601 44pin	F
REW	O	IC601 45pin	F
PB	O	IC601 46pin	F
PAUSE	O	IC601 47pin	F
REC	O	IC601 48pin	F
C·INSIDE	O	IC601 4pin	I

3-11. SYSTEM CONTROL CIRCUIT AND I/O

MODE			STC
SIGNAL	I/O	Pin No.	
TEND*1	I	IC601 9pin	H
C·PAUSE*2	I	IC601 1pin	H
TOP/END	O	IC601 3pin	L

*1 "L" at tape end.

*2 Camera pause signal.

INTERFACE

PICTURE SEARCH		REC	REC-PAUSE	TIMER REC	FR SEARCH	
E	REV				CUE	REV
	H	H	H	L	H	H

3-10. SYSTEM CONTROL CIRCUIT AND FUNCTION BLOCK INTERFACE

[illegible]

3-11. SYSTEM CONTROL CIRCUIT AND ITS PERIPHERAL CIRCUIT INTERFACE

MODE			STOP	FF	REW	PB	PB· PAUSE	PICTURE SEARCH		REC	REC· PAUSE	TIMER REC	FR SEARCH	
SIGNAL	I/O	Pin No.						CUE	REV				CUE	REV
TEND* ¹	I	IC601 9pin	H	H	H	H	H	H	H	H	H	H	H	H
C·PAUSE* ²	I	IC601 1pin	H	H	H	H	H	H	H	H	H	H	H	H
TOP/END	O	IC601 3pin	L	L	H	L	L	L	H	L	L	L	L	H

*1 "L" at tape end.

*2 Camera pause signal.

3-12. SYSTEM CONTROL CIRCUIT AND REEL MOTOR CONTROL CIRCUIT INTERFACE

MODE SIGNALI/O Pin No.			EJECTED	LOADING	THREADING	STOP	UN- THREADING	UN- LOADING	FF	REW	PB	PB- PAUSE	PICTURE SEARCH		REC	REC- PAUSE	TIMER REC	FR SEARCH	
													CUE	REV				CUE	REV
REEL FG	I	IC601 12pin																	
REEL LOW	O	IC601 58pin	L	L	H	L	H	L	L	L	H	H	L	L	H	H	H	H	H
REEL FWD	O	IC601 59pin	H	H	H	H	L	H	H	L	H	H	H	L	H	H	H	H	L
REEL STOP	O	IC601 60pin	H	H	L	H	L	H	L	L	L	H	L	L	L	H	L	L	L
FF/REW	O	IC601 61pin	L	L	L	L	L	L	H	H	L	L	L	L	L	L	L	H	H
REEL CUE/REV	O	IC601 43pin	L	L	L	L	L	L	L	L	L	L	H	H	L	L	L	L	L
PINCH S	O	IC601 23pin	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
TOP/END	O	IC601 3pin	L	L	L	L	L	L	L	H	L	L	L	H	L	L	L	L	H
UNLOAD	O	IC601 6pin	H	H	H	H	L	L	H	H	H	H	H	H	H	H	H	H	H
C-INSIDE	O	IC601 4pin	H	H	H	L	H	H	L	L	L	L	L	L	L	L	L	L	L

3-14. SYSTEM CONTROL CIRCUIT AND SE

MODE SIGNALI/O Pin No.			STOP (E-E)
DRUM ROT	I	IC601 11pin	H
CAP ROT	I	IC601 10pin	L
VD/CTL	I	IC601 29pin	
DRUM STOP	O	IC601 50pin	H
CAP STOP	O	IC601 51pin	H
REC-PAUSE	O	IC601 53pin	H
CUE/REV	O	IC601 54pin	L
CAP FWD	O	IC601 55pin	H
194 RESET*1	O	IC601 27pin	H
REC (REC LED)	O	IC601 48pin	H
FF/REW	O	IC601 61pin	L

*1 Reset signal for CX194.

3-13. SYSTEM CONTROL CIRCUIT AND VIDEO CIRCUIT INTERFACE

MODE SIGNALI/O Pin No.			STOP (E-E)	FF	REW	PB	PB- PAUSE	PICTURE SEARCH		REC	REC- PAUSE	TIMER REC	FR SEARCH	
								CUE	REV				CUE	REV
V MUTE	O	IC601 56pin	L	L	L	L	L	L	L	L	L	L	L	L
MC	O	IC601 57pin	L	L	L	L	H	H	H	L	L	L	H	H
V REC-PAUSE	O	CN601 3pin	L	L	L	L	L	L	L	H*1	L	H*1	L	L
PB + DUB	O	IC601 52pin	H	H	H	L	L	L	L	H	H	H	L	L

*1 RECORD mode selector switch: VIDEO

3-15. SYSTEM CONTROL CIRCUIT AND AU

MODE SIGNALI/O Pin No.			STOP (E-E)
A MUTE 2	O	IC601 7pin	L
B CONT	O	IC601 8pin	H
REC-PAUSE	O	IC601 53pin	H
PB + DUB	O	IC601 52pin	H

REW	PB	PB· PAUSE	PICTURE SEARCH		REC	REC· PAUSE	TIMER REC	FR SEARCH	
			CUE	REV				CUE	REV
L	H	H	L	L	H	H	H	H	H
L	H	H	H	L	H	H	H	H	L
L	L	H	L	L	L	H	L	L	L
H	L	L	L	L	L	L	L	H	H
L	L	L	H	H	L	L	L	L	L
H	H	H	H	H	H	H	H	H	H
H	L	L	L	H	L	L	L	L	H
H	H	H	H	H	H	H	H	H	H
L	L	L	L	L	L	L	L	L	L

3-14. SYSTEM CONTROL CIRCUIT AND SERVO CIRCUIT INTERFACE

SIGNAL	MODE		STOP	FF	REW	PB	PB· PAUSE	PICTURE SEARCH		REC	REC· PAUSE	TIMER REC	FR SEARCH	
	I/O	Pin No.						CUE	REV				CUE	REV
DRUM ROT	I	IC601 11pin	H	L	L	L	L	L	L	L	L	L	L	L
CAP ROT	I	IC601 10pin	L	L	L	H	H	H	H	H	H	H	L	L
VD/CTL	I	IC601 29pin		CTL	CTL	CTL		CTL	CTL	VD		VD	CTL	CTL
DRUM STOP	O	IC601 50pin	H	L	L	L	L	L	L	L	L	L	L	L
CAP STOP	O	IC601 51pin	H	H	H	L	L	L	L	L	L	L	H	H
REC·PAUSE	O	IC601 53pin	H	H	H	H	H	H	H	L	H	L	H	H
CUE/REV	O	IC601 54pin	L	L	L	L	L	H	H	L	L	L	L	L
CAP FWD	O	IC601 55pin	H	H	H	H	H	H	L	H	H	H	H	H
194 RESET*1	O	IC601 27pin	H	H	H	H	H	H	H	H	H	H	H	H
REC (REC LED)	O	IC601 48pin	H	H	H	H	H	H	H	L	L	L	H	H
FF/REW	O	IC601 61pin	L	H	H	L	L	L	L	L	L	L	H	H

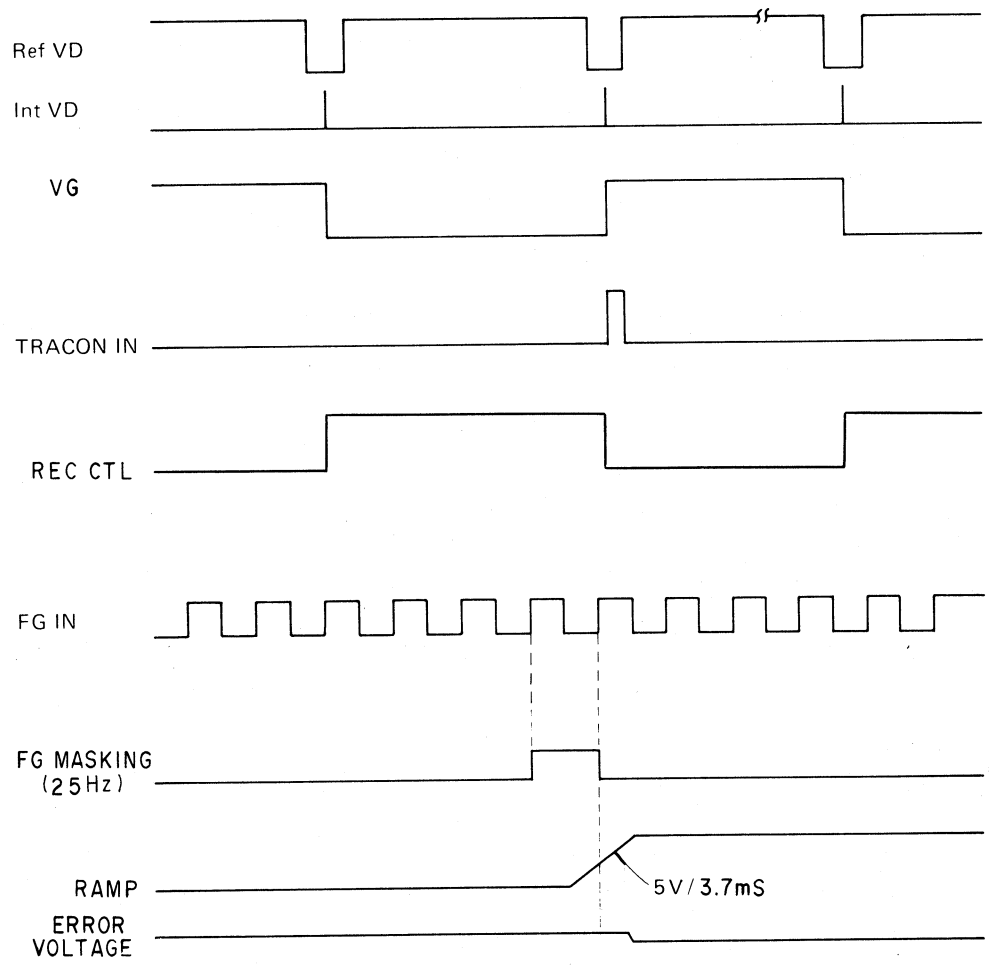
*1 Reset signal for CX194.

REC	REC· PAUSE	TIMER REC	FR SEARCH	
			CUE	REV
L	L	L	L	L
L	L	L	H	H
H*1	L	H*1	L	L
H	H	H	L	L

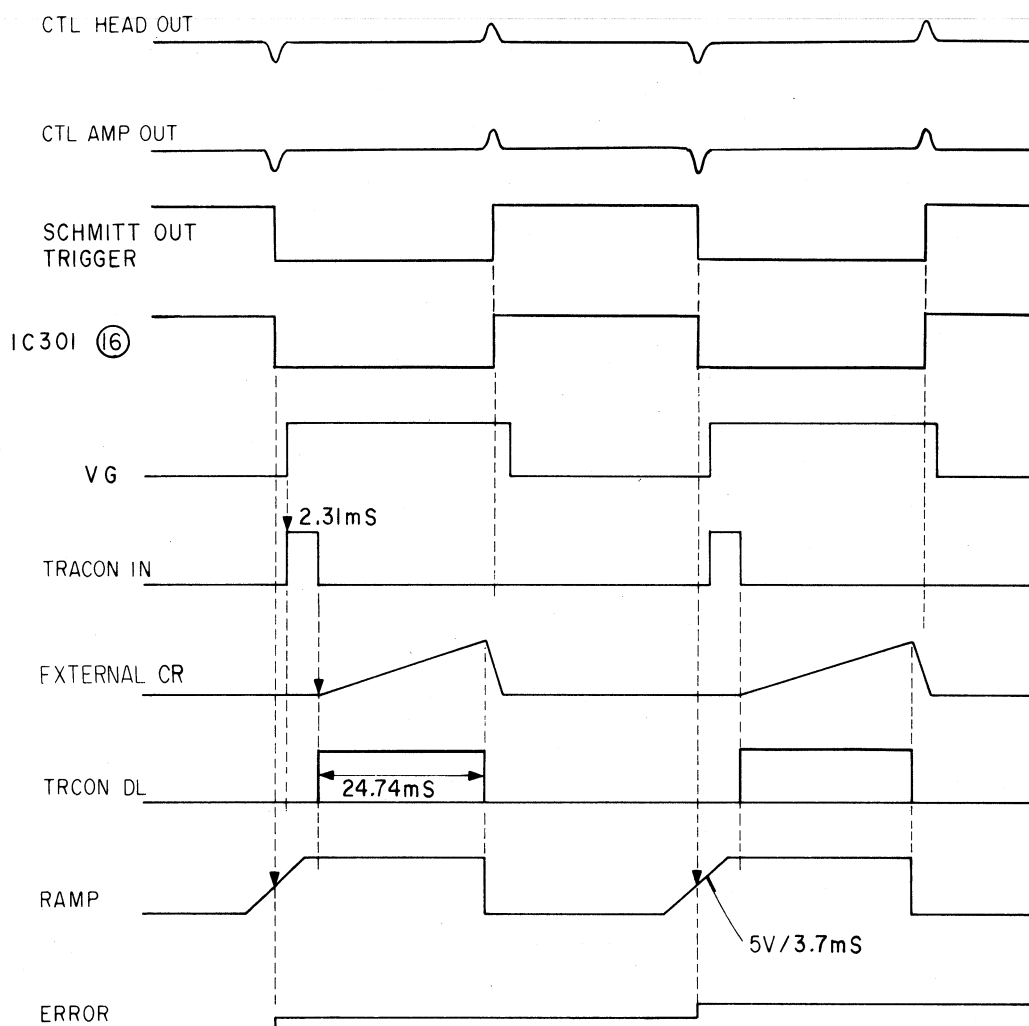
3-15. SYSTEM CONTROL CIRCUIT AND AUDIO CIRCUIT INTERFACE

SIGNAL	MODE		STOP (E-E)	FF	REW	PB	PB· PAUSE	PICTURE SEARCH		REC	REC· PAUSE	TIMER REC	FR SEARCH	
	I/O	Pin No.						CUE	REV				CUE	REV
A MUTE 2	O	IC601 7pin	L	L	L	L	H	H	H	L	L	L	H	H
B CONT	O	IC601 8pin	H	H	H	H	H	H	H	L	H	L	H	H
REC·PAUSE	O	IC601 53pin	H	H	H	H	H	H	H	L	H	L	H	H
PB + DUB	O	IC601 52pin	H	H	H	L	L	L	L	H	H	H	L	L

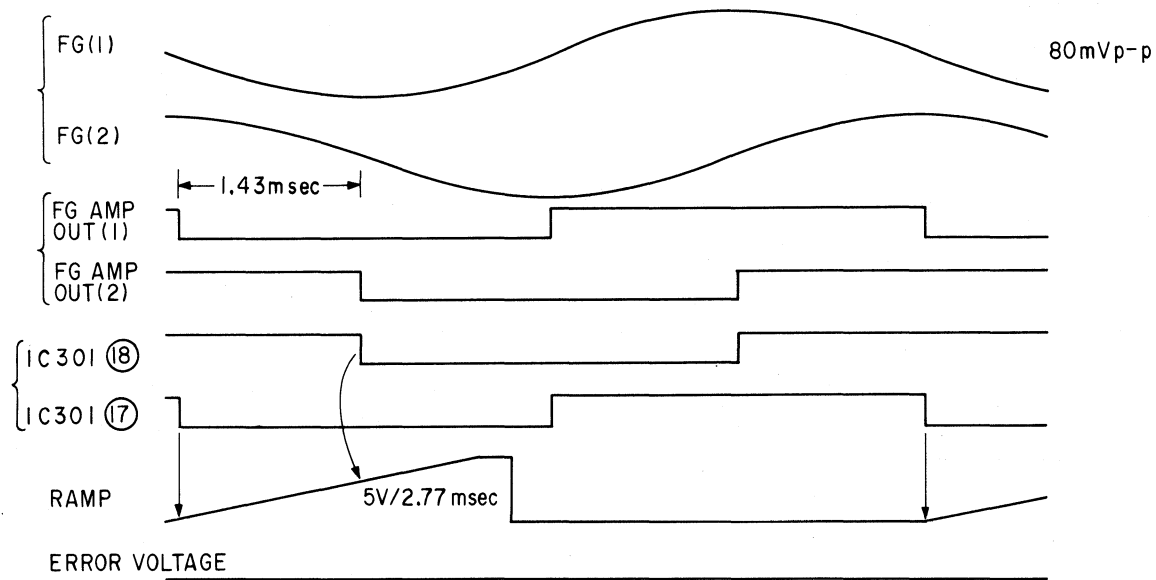
3-16. CAPSTAN PHASE SYSTEM TIMING CHART (REC)



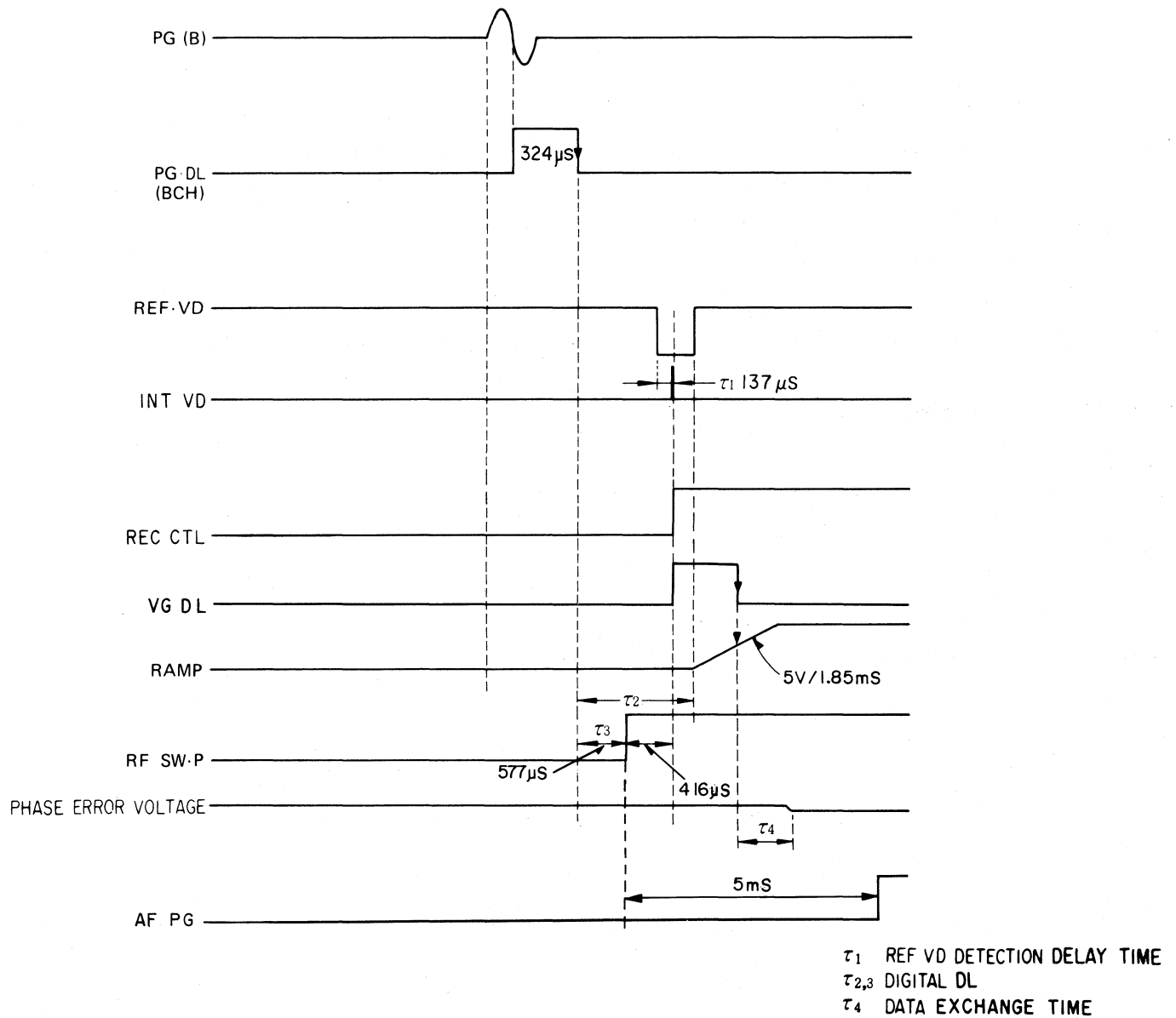
3-17. CAPSTAN PHASE SYSTEM TIMING CHART (PB)



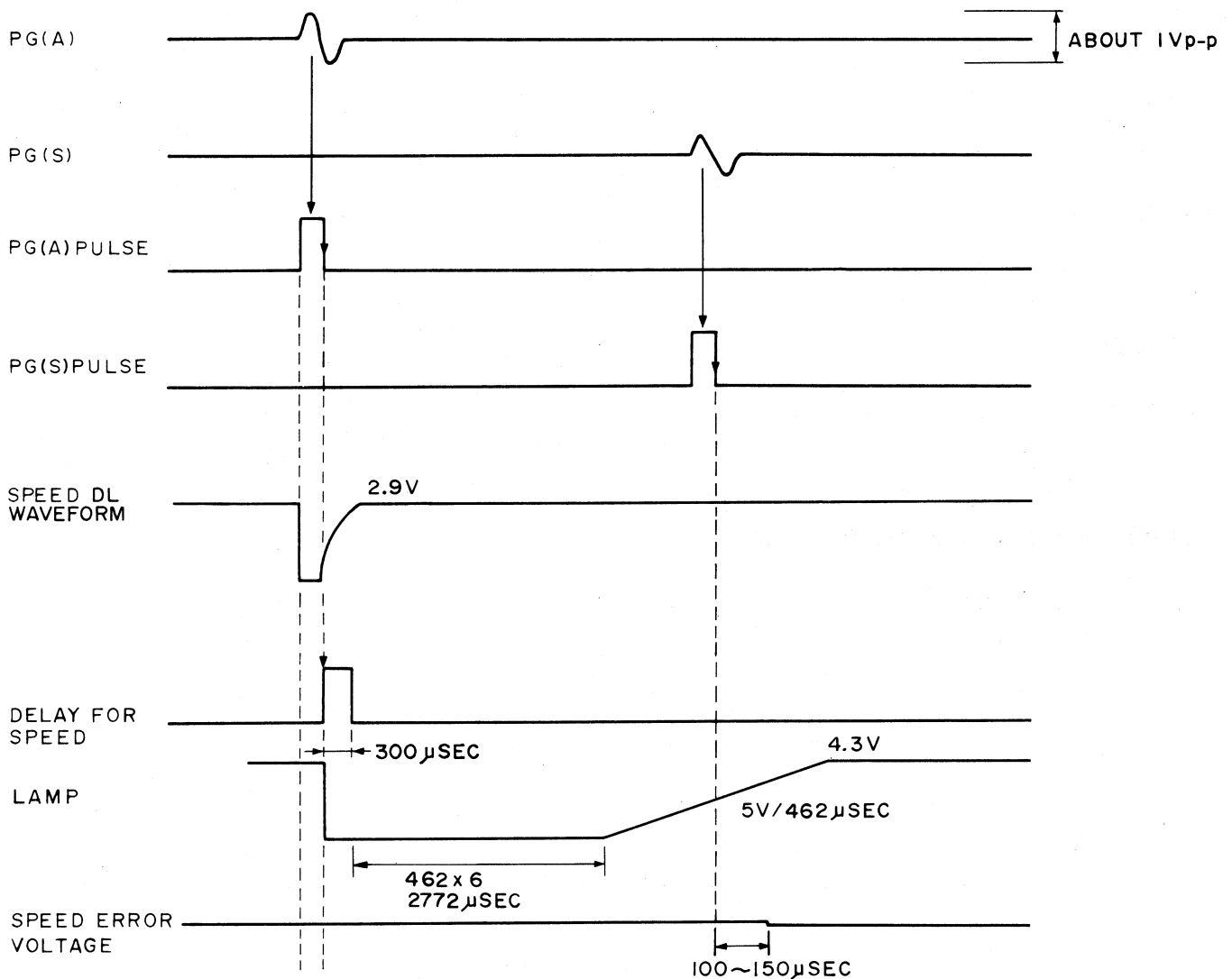
3-18. CAPSTAN SPEED SYSTEM TIMING CHART



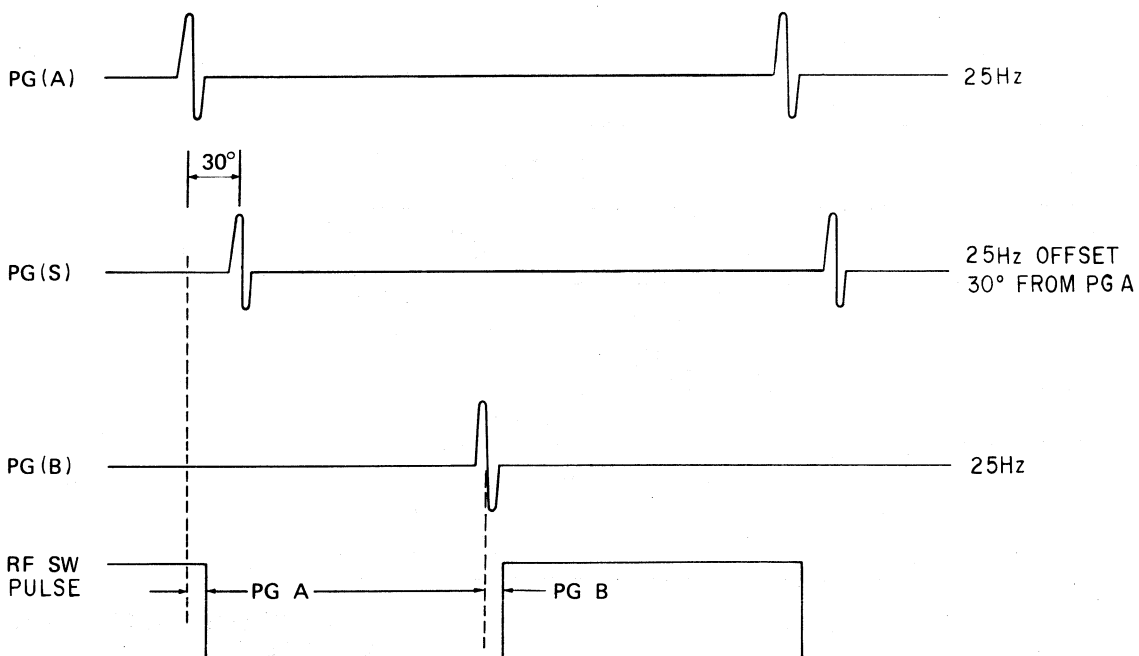
3-19. DRUM PHASE SYSTEM TIMING CHART



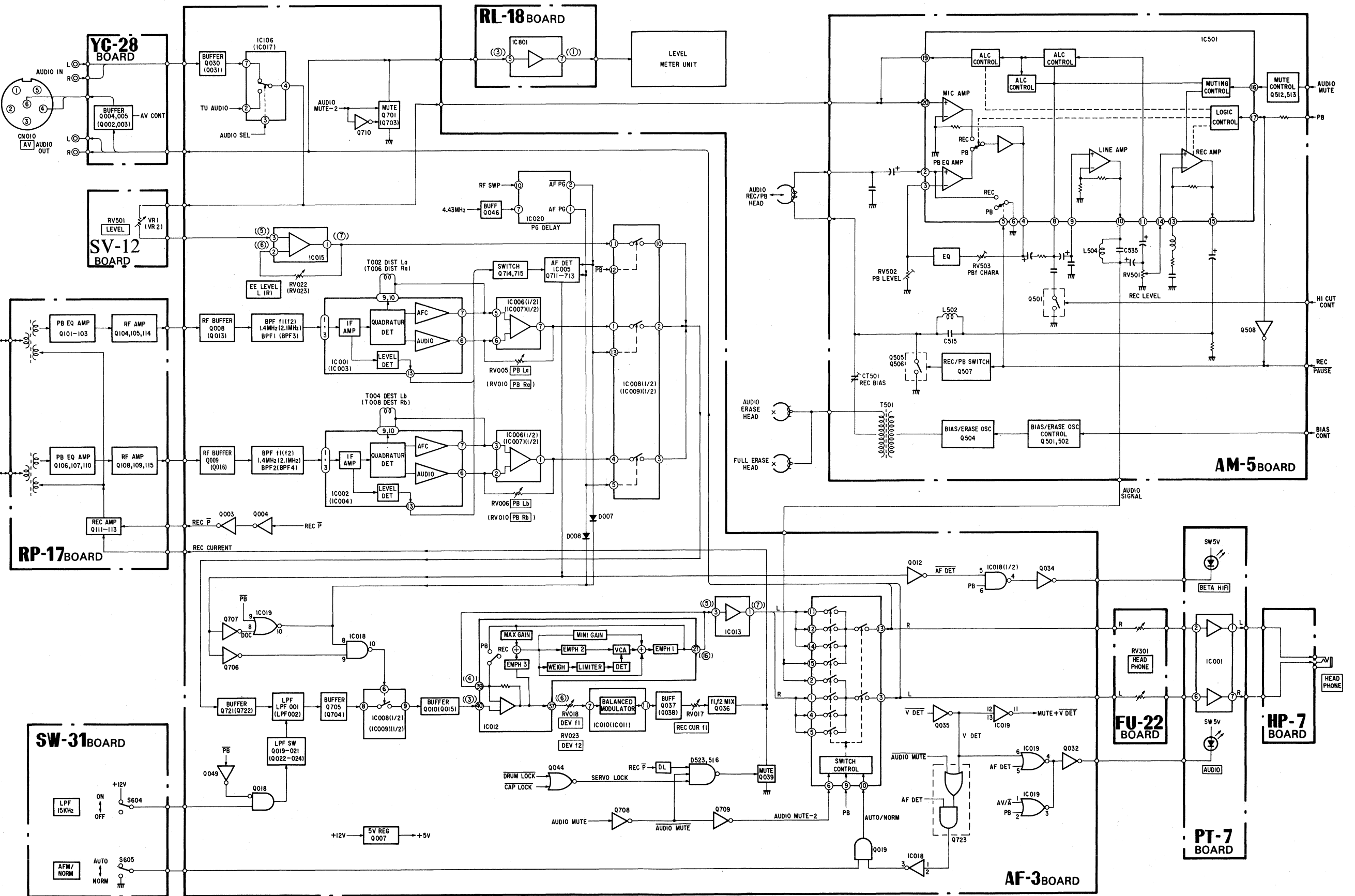
3-20. DRUM SPEED SYSTEM TIMING CHART



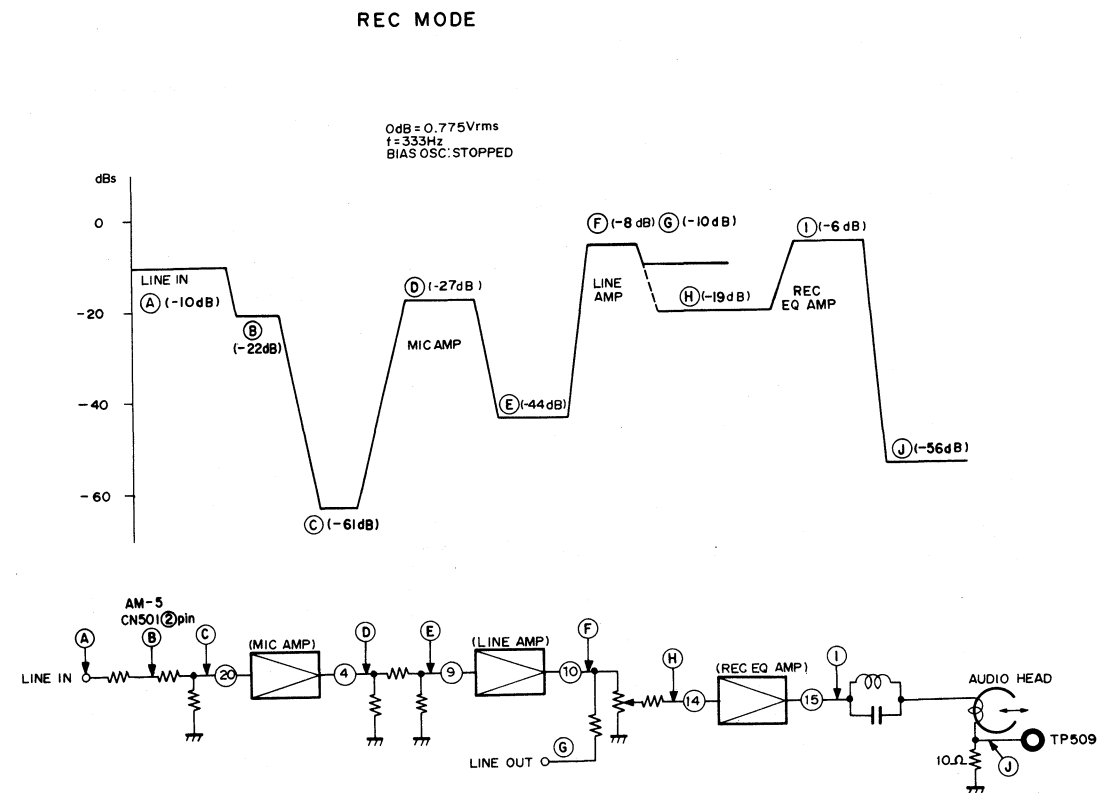
3-21. PG SIGNAL TIMING CHART



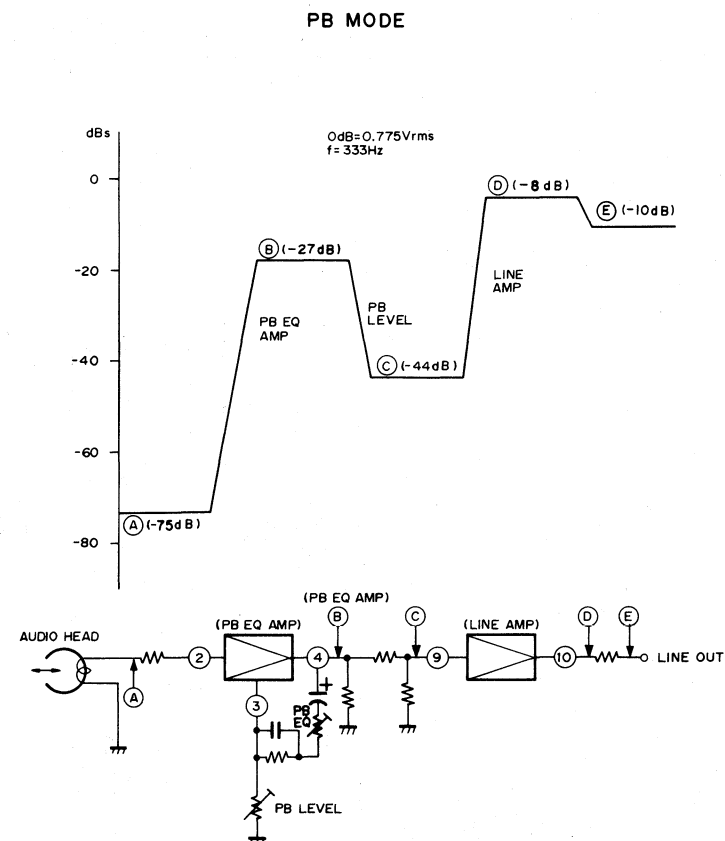
3-22. AUDIO BLOCK DIAGRAM



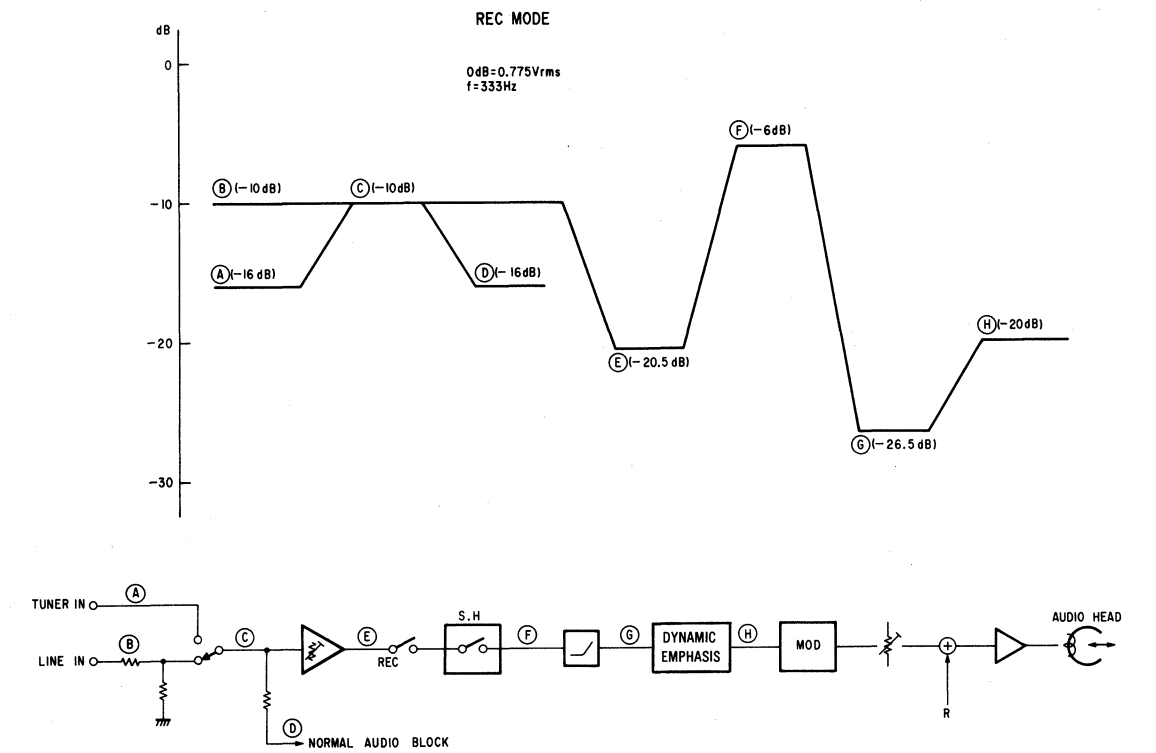
3-23. AUDIO LEVEL DIAGRAM (REC)



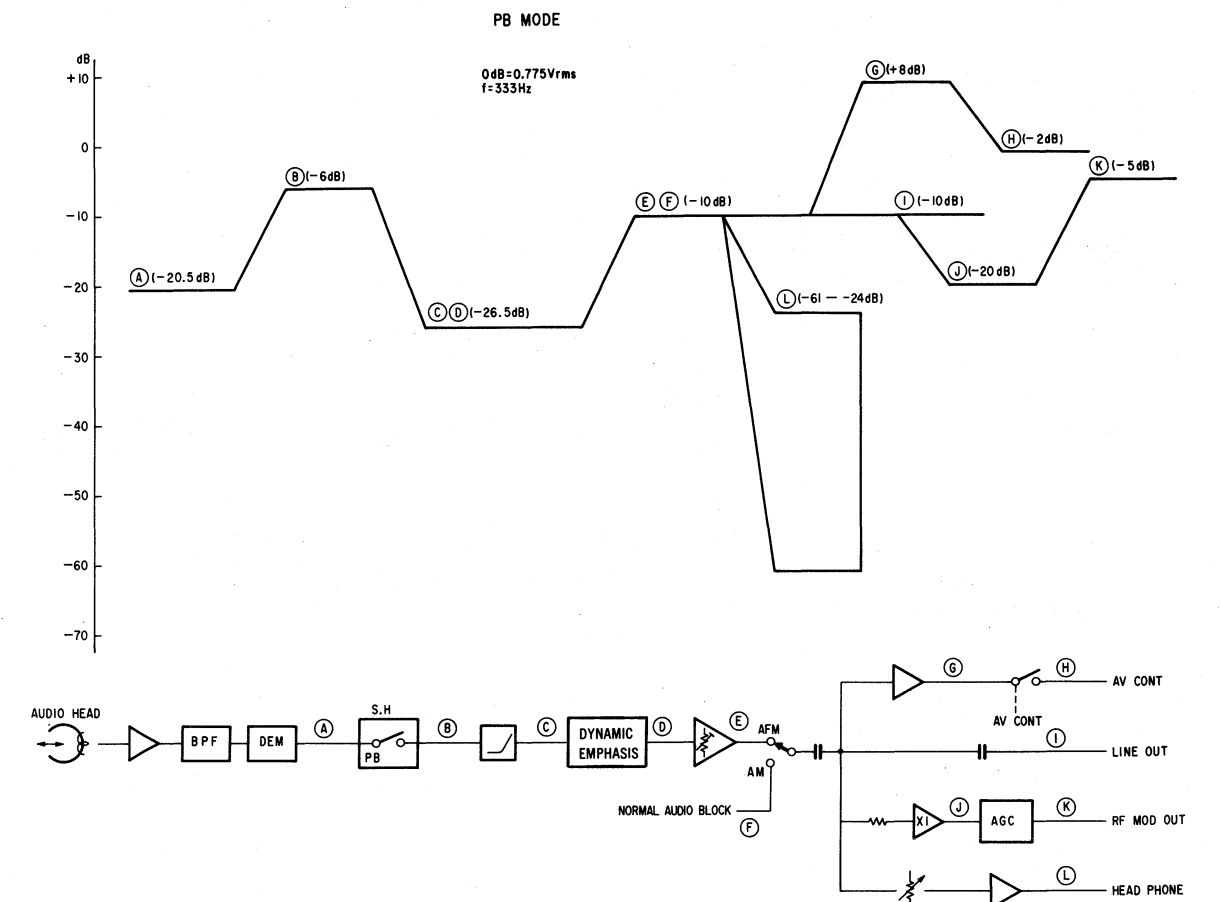
3-24. AUDIO LEVEL DIAGRAM (PB)



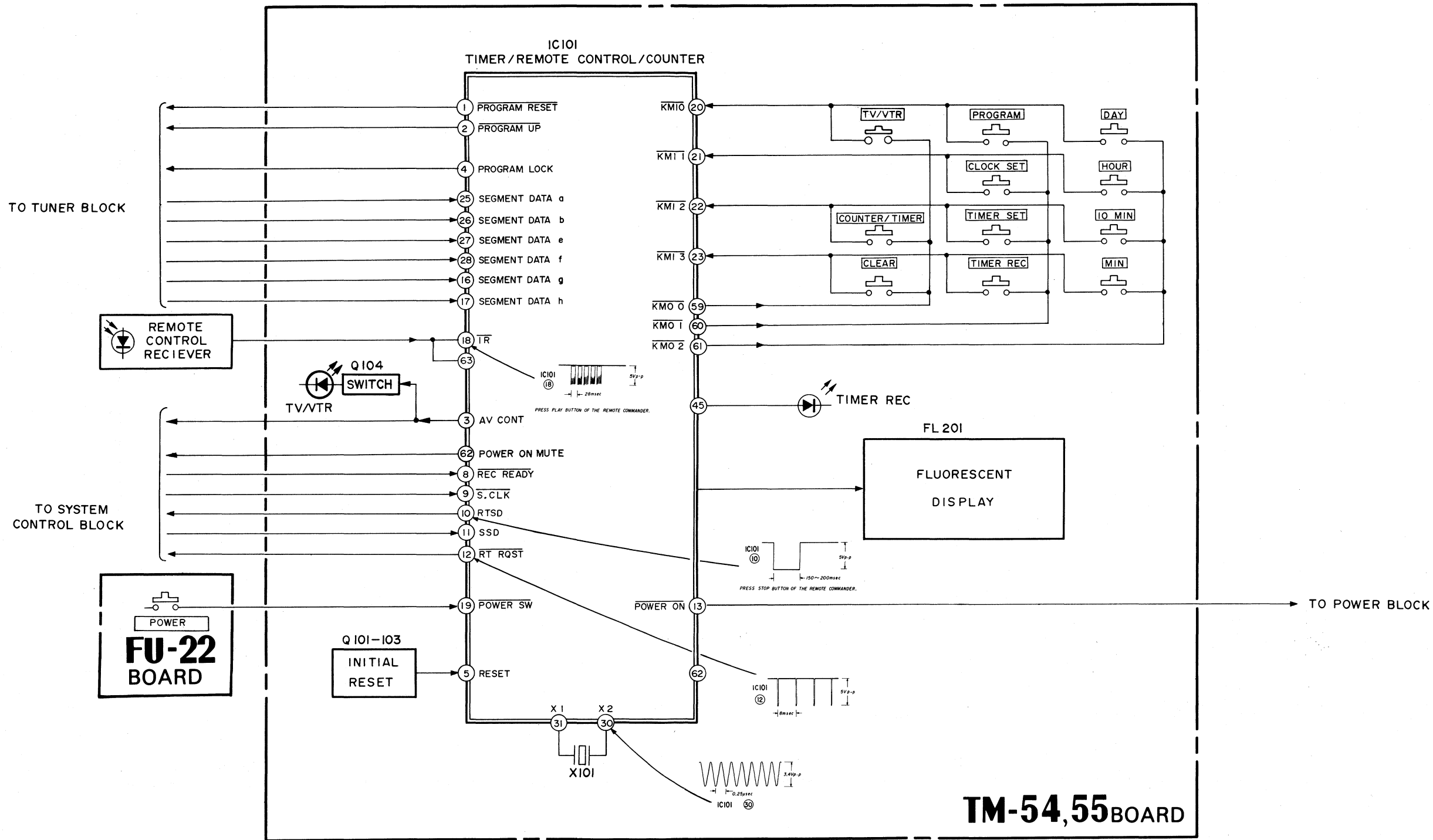
3-25. AFM LEVEL DIAGRAM (REC)



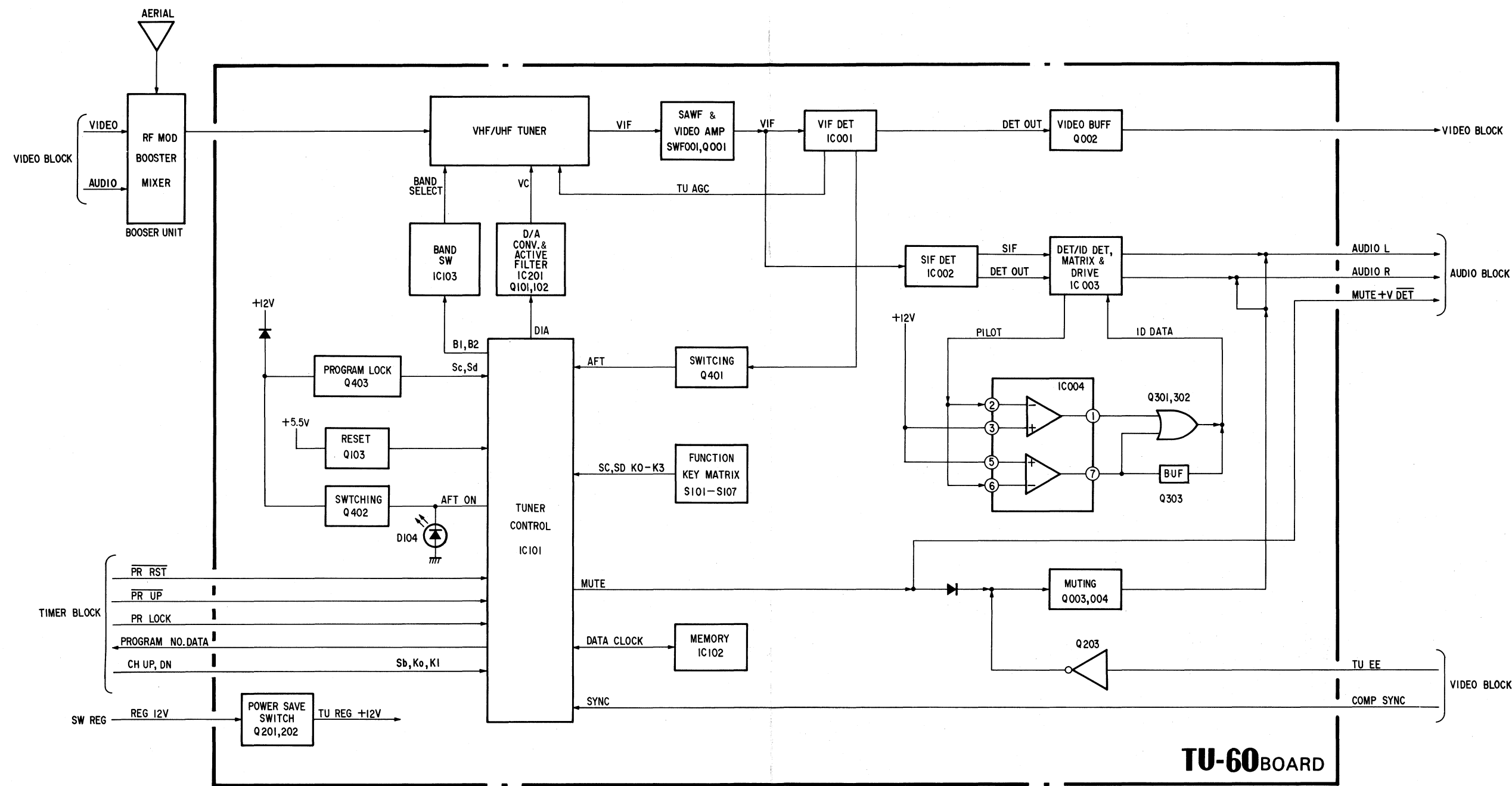
3-26. AFM LEVEL DIAGRAM (PB)



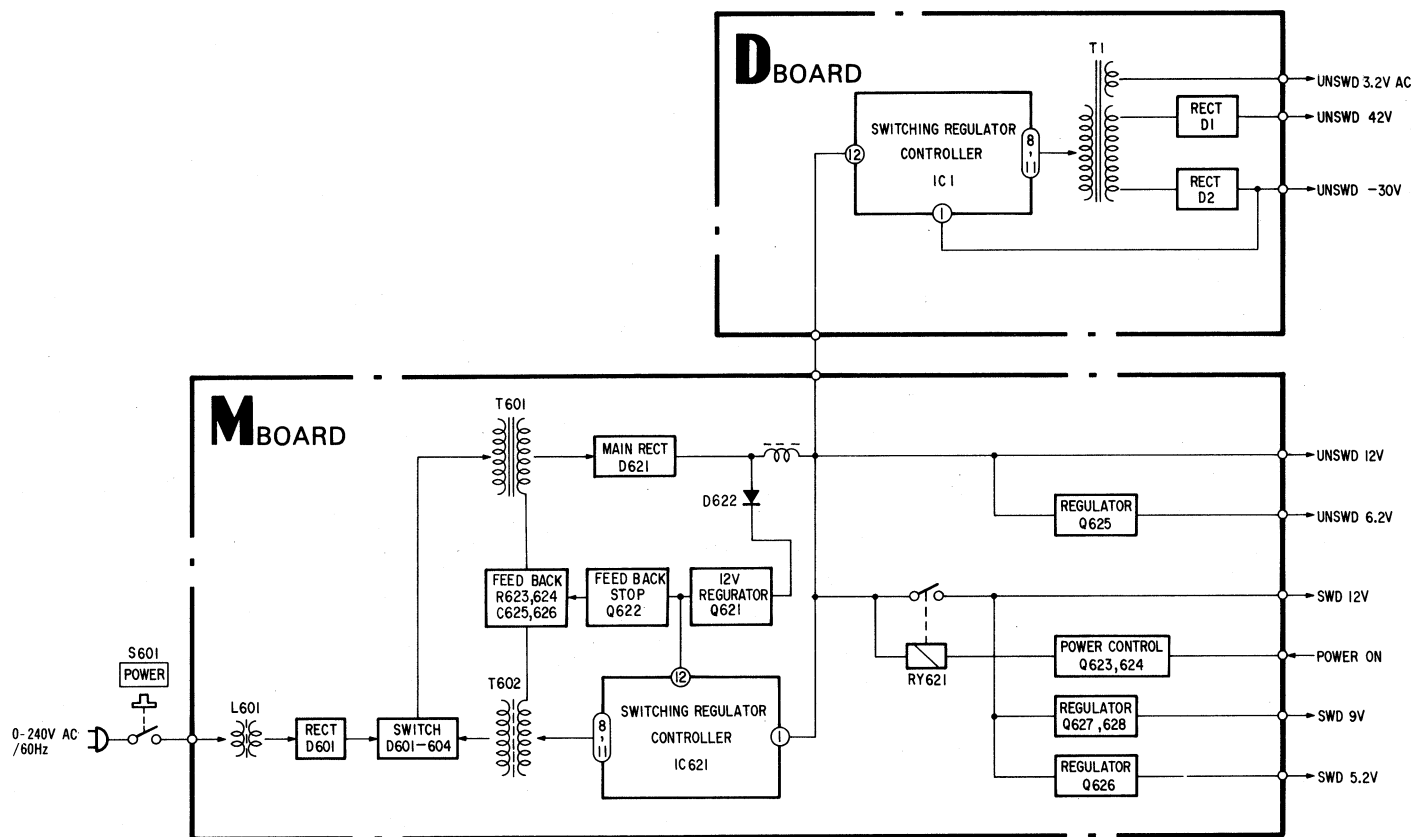
3-27. TIMER BLOCK DIAGRAM



3-28. TUNER BLOCK DIAGRAM

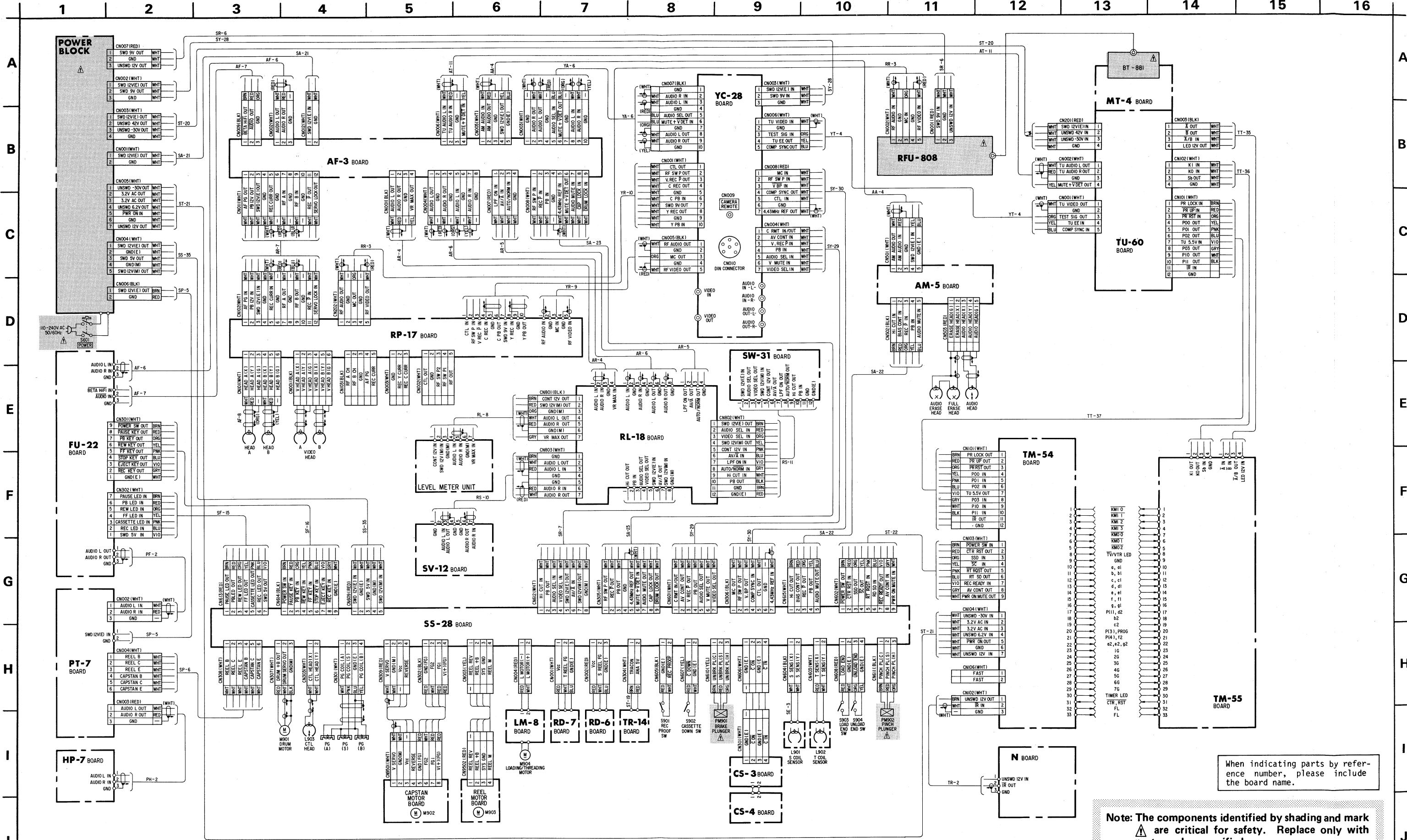


3-29. POWER BLOCK DIAGRAM

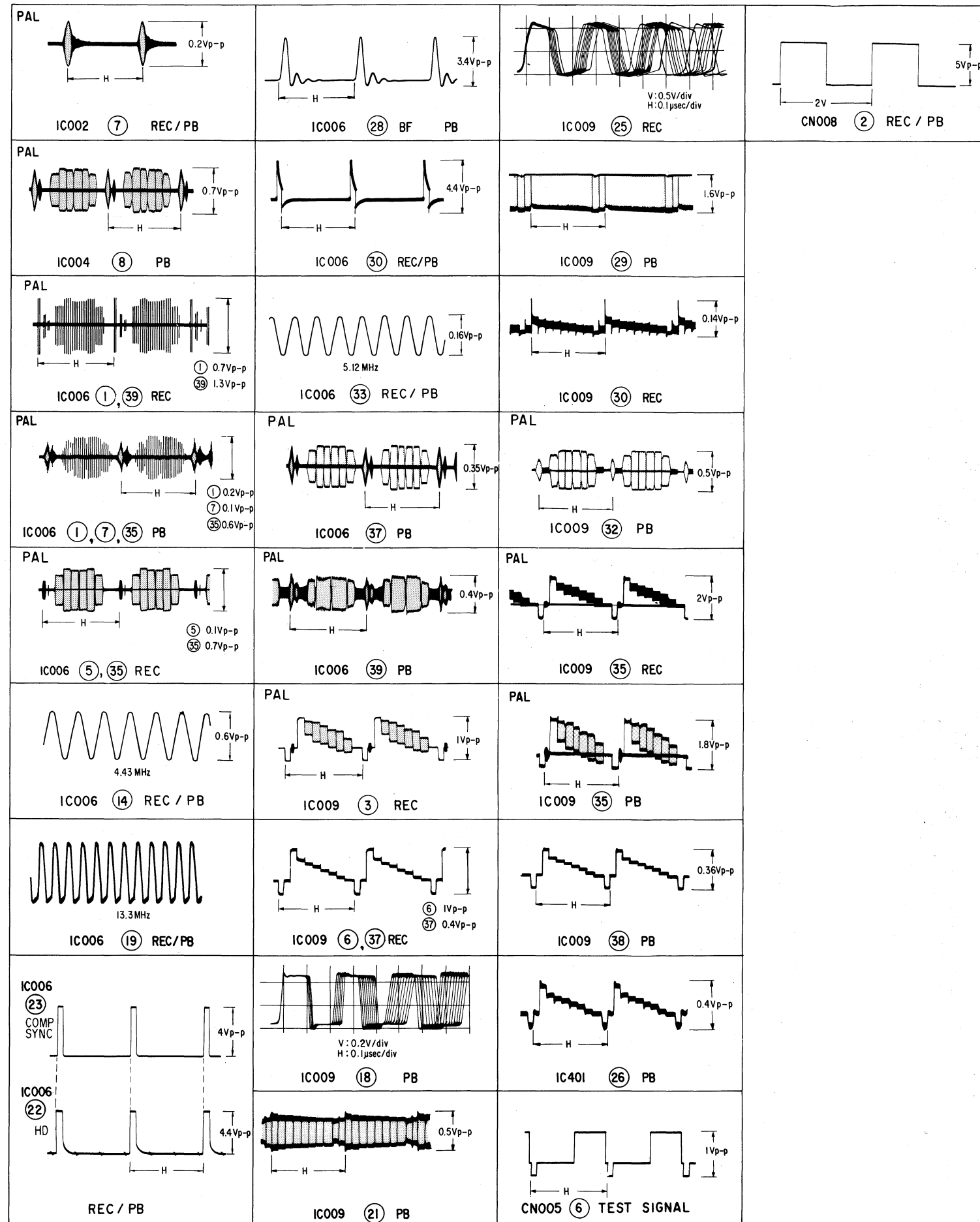


SECTION 4 SCHEMATIC DIAGRAM AND PRINTED WIRING BOARDS

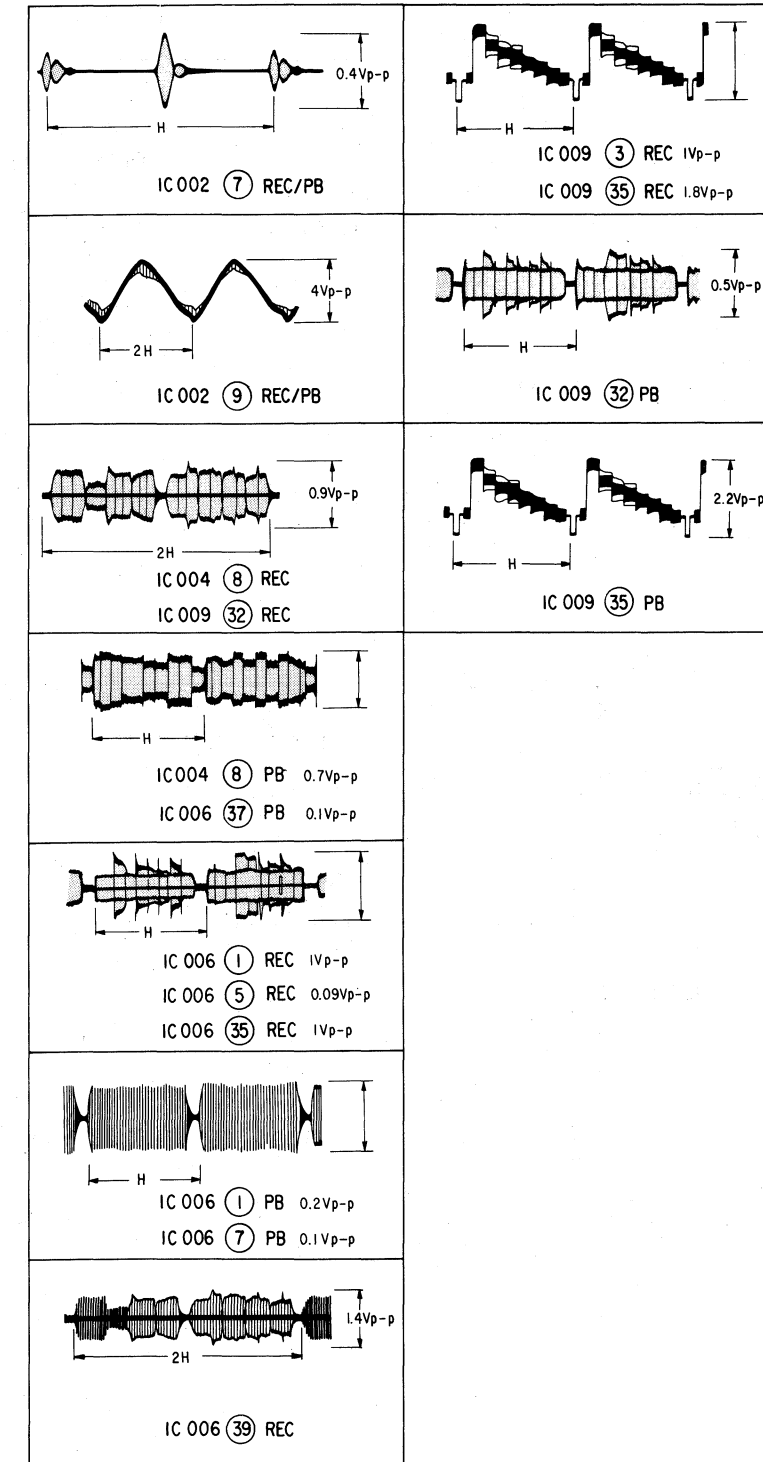
4-1. FLAME SCHEMATIC DIAGRAM



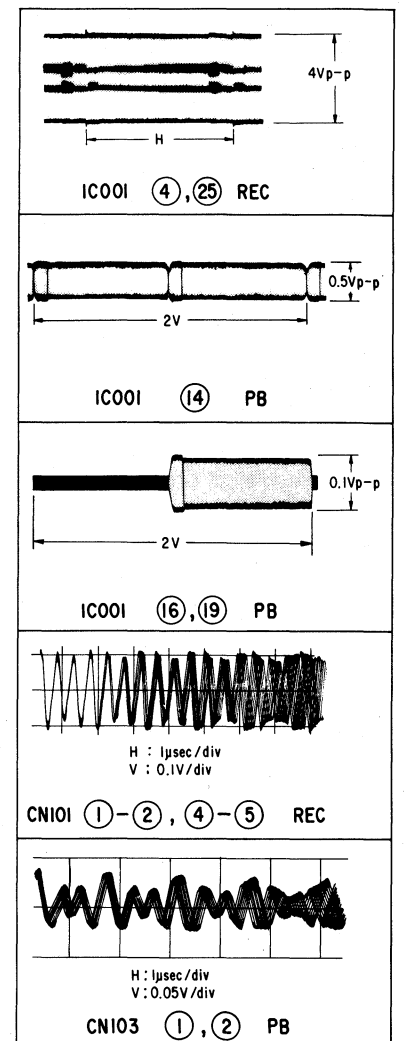
YC-28 BOARD (PAL/SECAM)



YC-28 BOARD (SECAM)



RP-17 BOARD (PAL/SECAM)



indicating parts by reference number, please include board name.

identified by shading and mark safety. Replace only with

VIDEO VIDEO

4-2. RP-17 (LOW-CONVERTED CHROMA, Y-FM & AFM SIGNALS, RECORD/PLAYBACK AMP), YC-28 (Y & CHROMA SIGNALS RECORD/PLAYBACK PROCESS) SCHEMATIC DIAGRAM

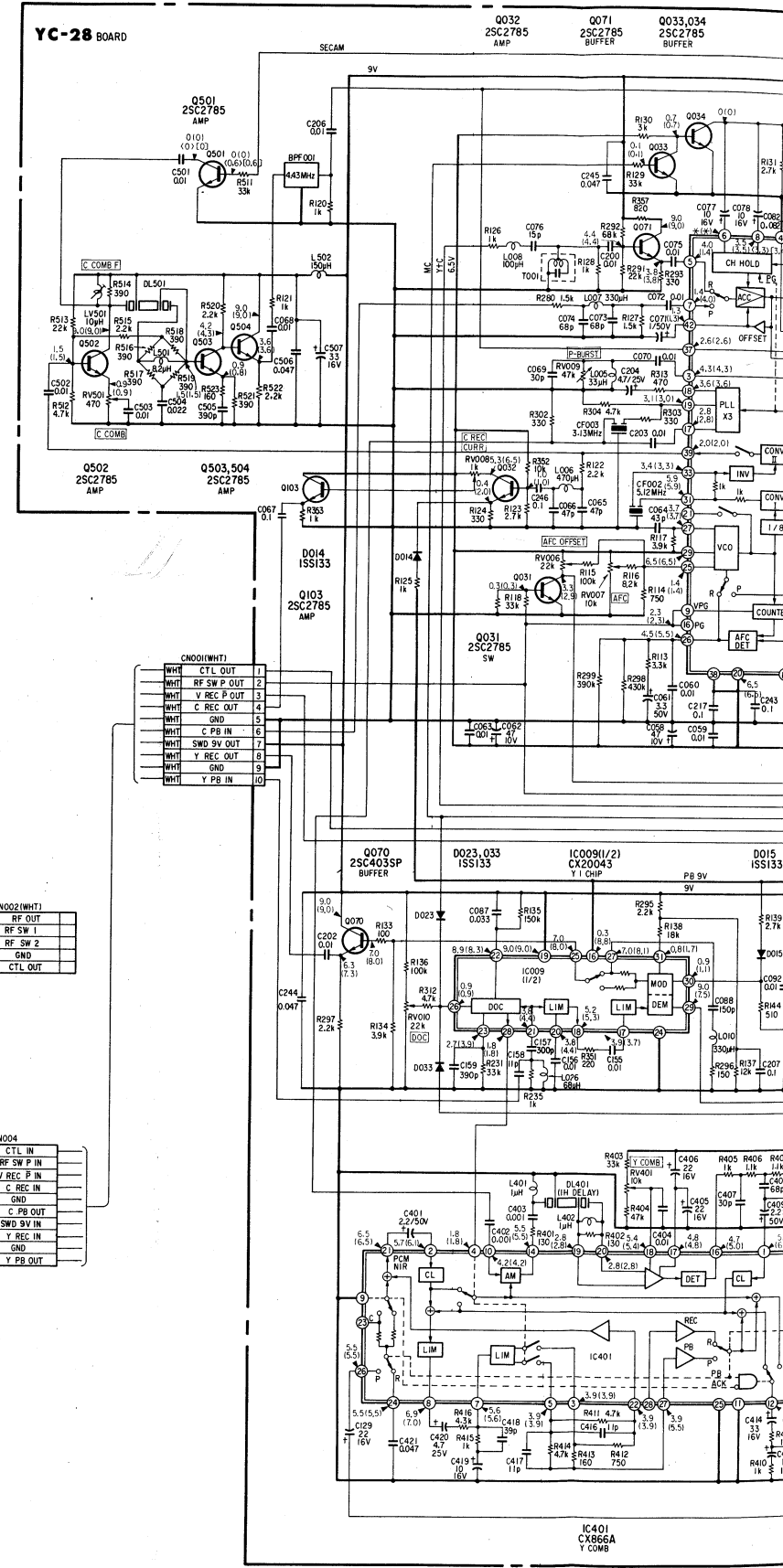
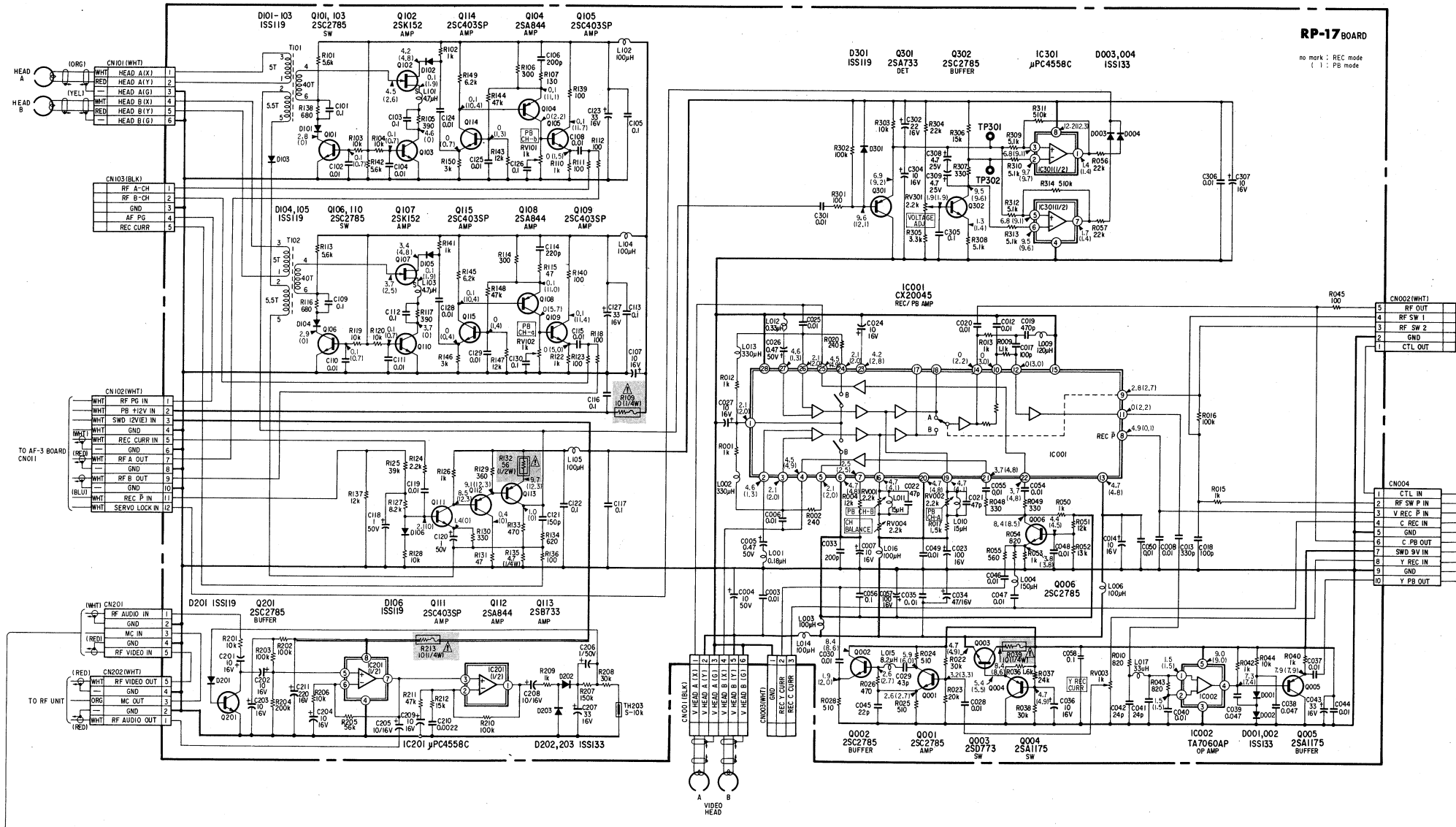
— Ref. No. RP-17 BOARD : 2000 series, YC-28 BOARD : 1000 series —

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

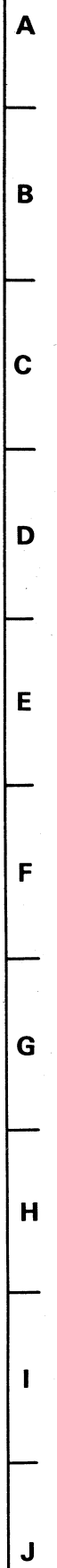
- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
-  : Nonflammable resistor
-  : Fusible resistor
-  : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10M Ω).

Note: The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.



VIDEO VIDEO

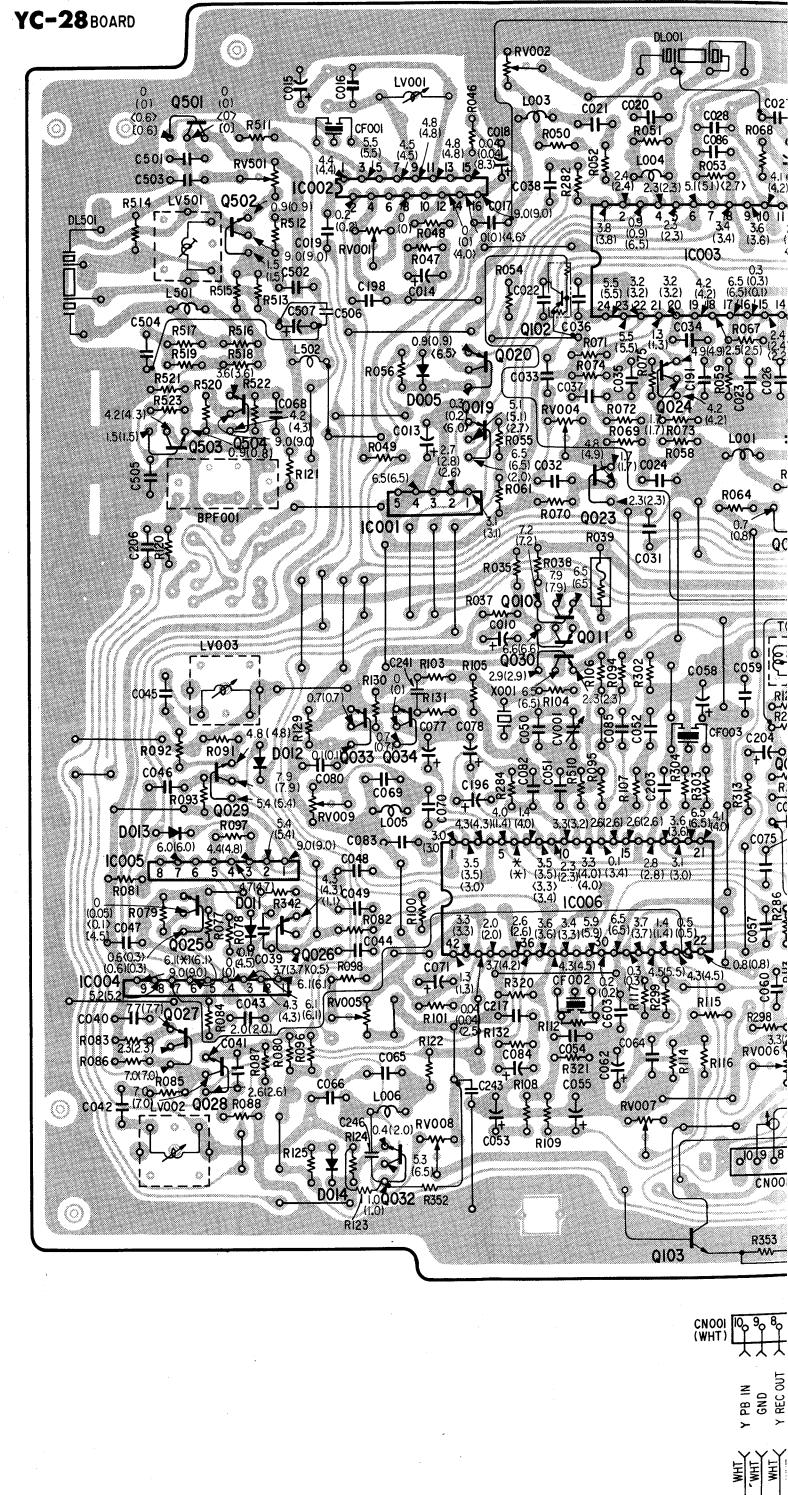
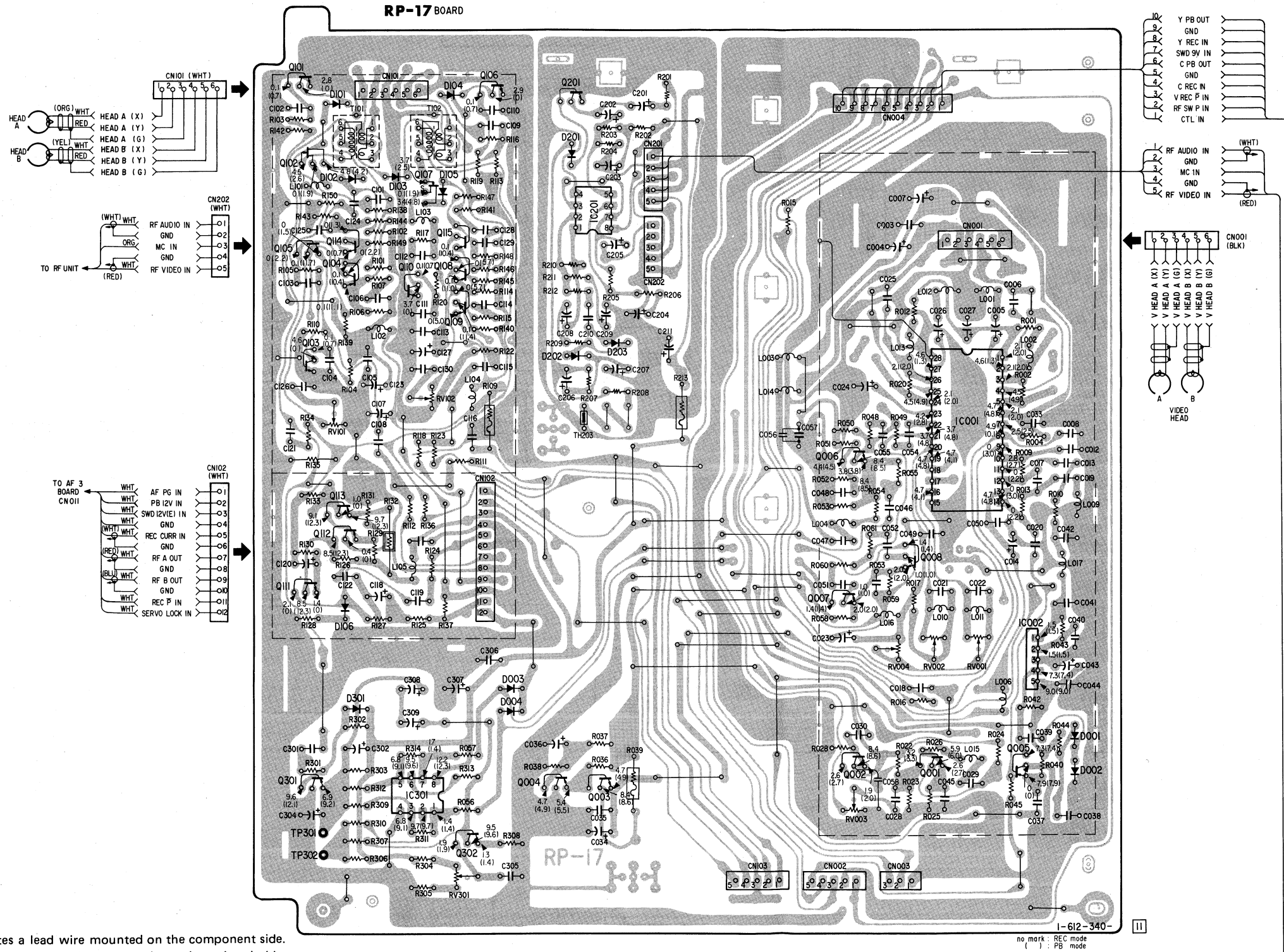


VIDEO VIDEO

RP-17 (LOW-CONVERTED CHROMA, Y-FM & AFM SIGNALS, RECORD/PLAYBACK AMP), YC-28 (Y & CHROMA SIGNALS RECORD/PLAYBACK PROCESS) PRINTED WIRING BOARDS

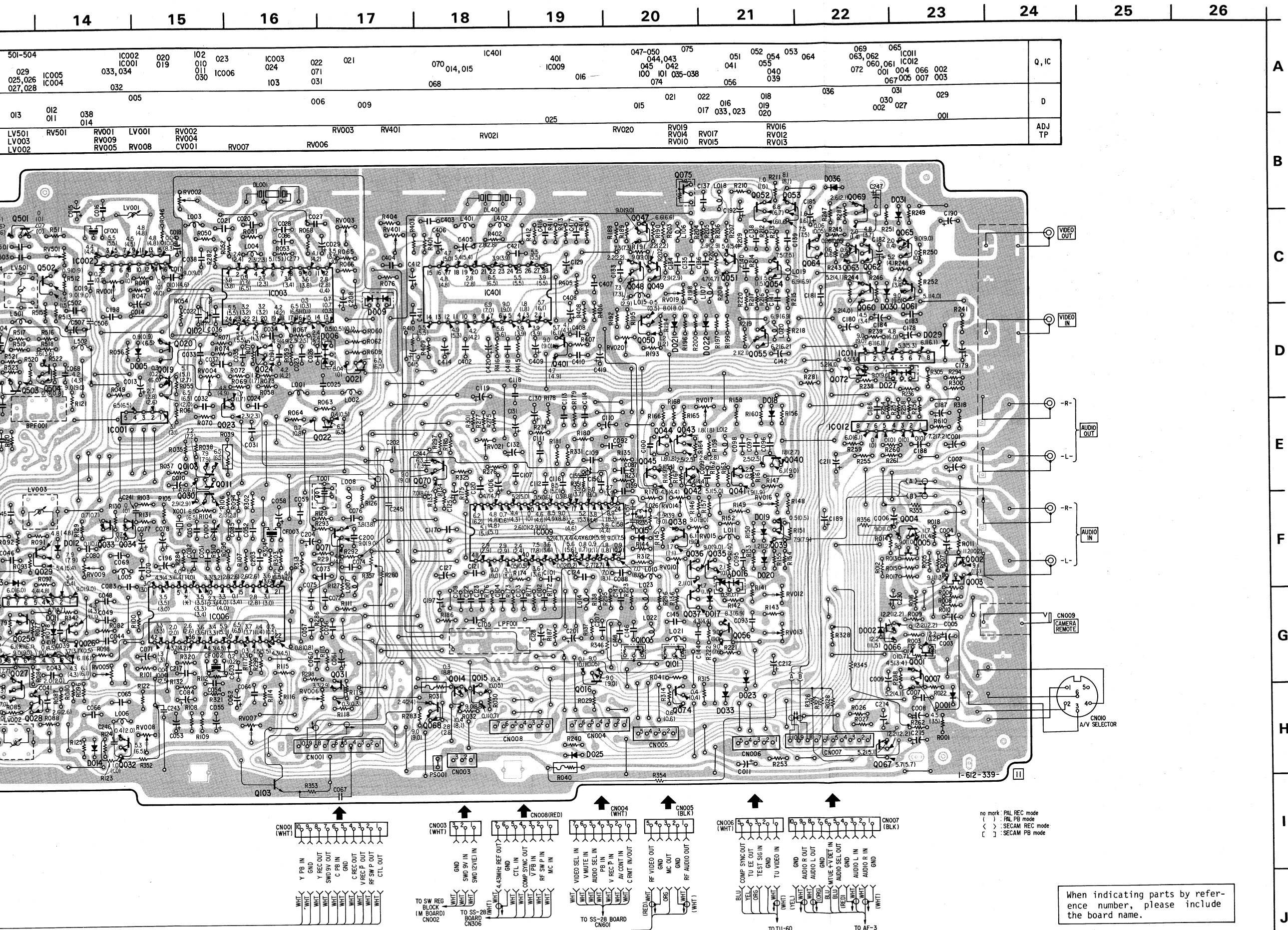
– Ref. No. RP-17 BOARD : 2000 series, YC-28 BOARD : 1000 series –

Q, IC	101 102 105 103 111 301	114 104 113 112	107 110 IC301	115 108 109 302	106 201 IC201	006 004 003	IC001	IC002 005	002 001	501-504 029 025,026 027,028	IC005 IC004	IC002 IC001 033,034	020 019	102 010 011 030	023 IC006	IC003 024 103	027 07 03
D	101 102 106 301	103 105	104 105	003 004	201 202,203	001 002	013	012 011	038 014	005	000						
ADJ TP	RV101 TP301 TP302	RV102 RV301	RV003	RV004	RV002	RV001	LV501 LV003 LV002	RV501	RV001 RV004 RV005	LV001	RV002 RV004 CV001	RV008	RV007				



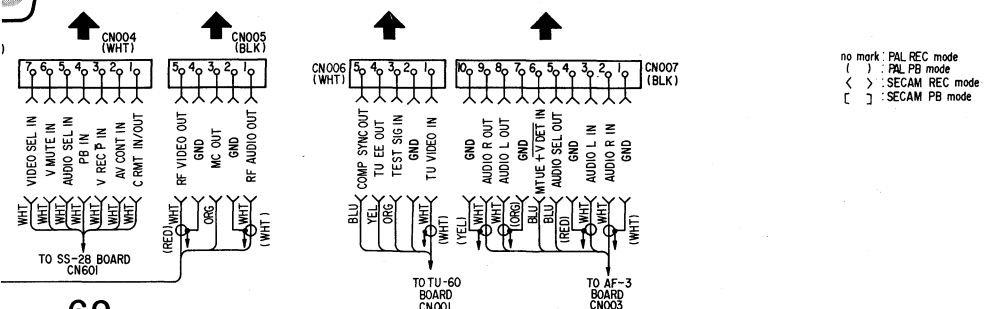
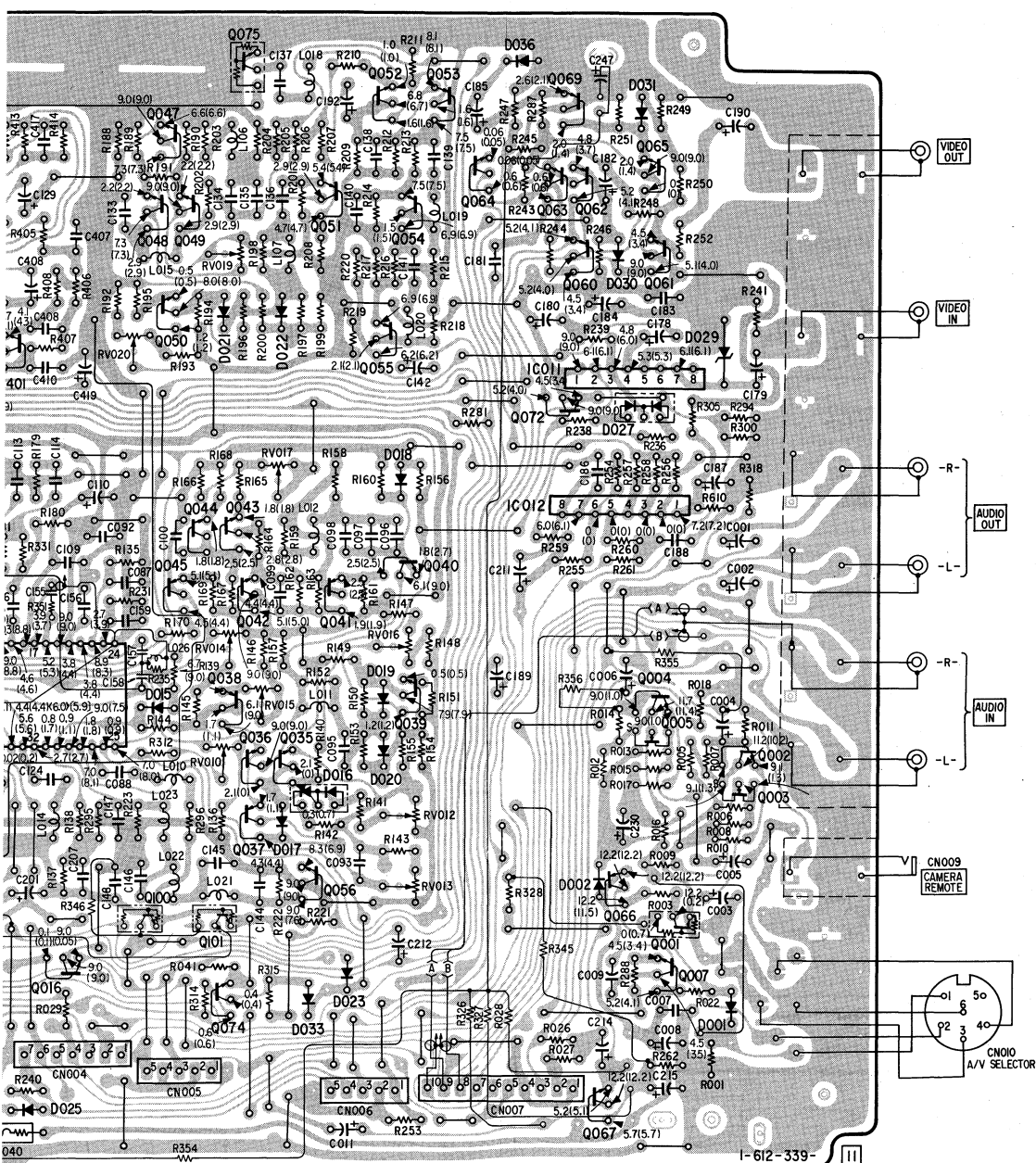
- ○ : indicates a lead wire mounted on the component side.
- ● : indicates a lead wire mounted on the printed side.
- ■ : soldering side
- ■ : B+ pattern

VIDEO VIDEO



VIDEO VIDEO

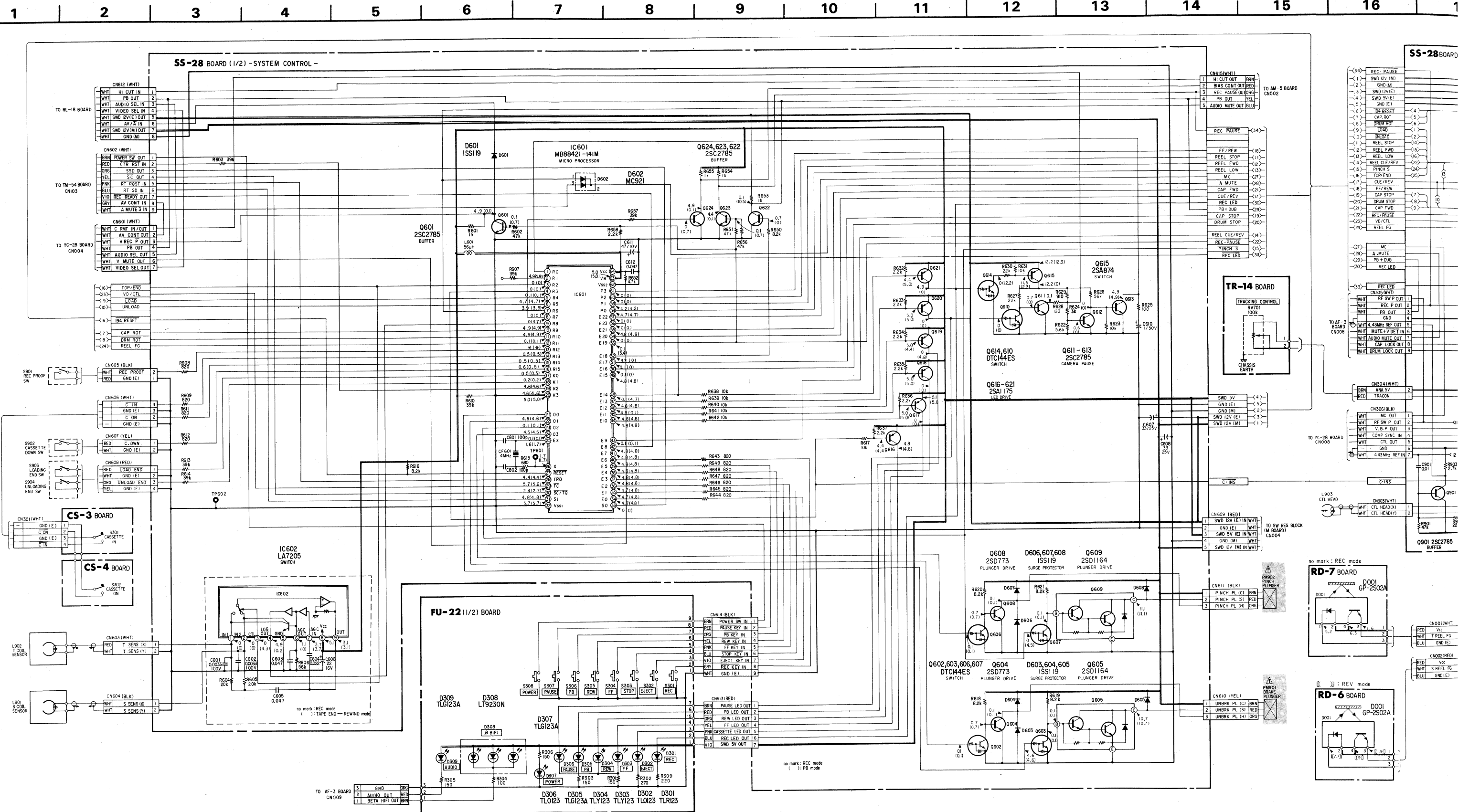
9	20	21	22	23	24	25	26
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[illegible]

When indicating parts by reference number, please include the board name.

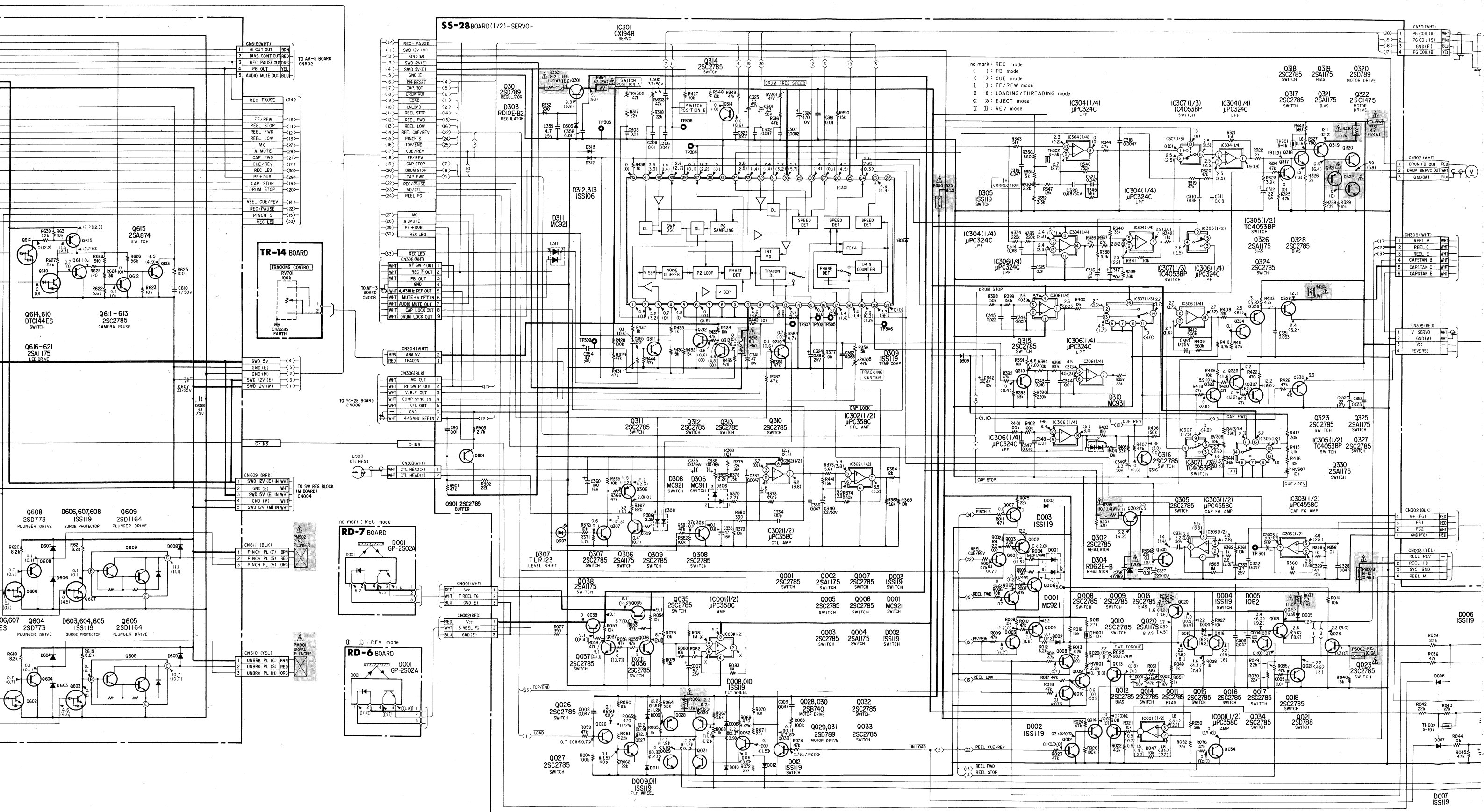
4-3. SS-28 (SERVO/SYSTEM CONTROL), FU-22 (FUNCTION SWITCH & IND), TR-14 (TRACKING CONTROL), RD-6 (ROTATION DETECTOR), RD-7 (ROTATION DETECTOR), LM-8 (NOISE FILTER), CS-3 (CASSETTE ON SWITCH), CS-4 (CASSETTE IN SWIT - Ref. No. SS-28 BOARD : 4000 series, FU-22 BOARD : 7300 series, TR-14 BOARD : 5700 series, RD-6 BOARD : 6700 series, RD-7 BOARD : 6800 series, LM-8 BOARD : 7100 series, CS-3, CS-4 BOARD : 6300 series, PT-7 BOARD : 7700 series, REEL MOTOR BOARD : 7500 series -

A
B
C
D
E
F
G
H
I
J



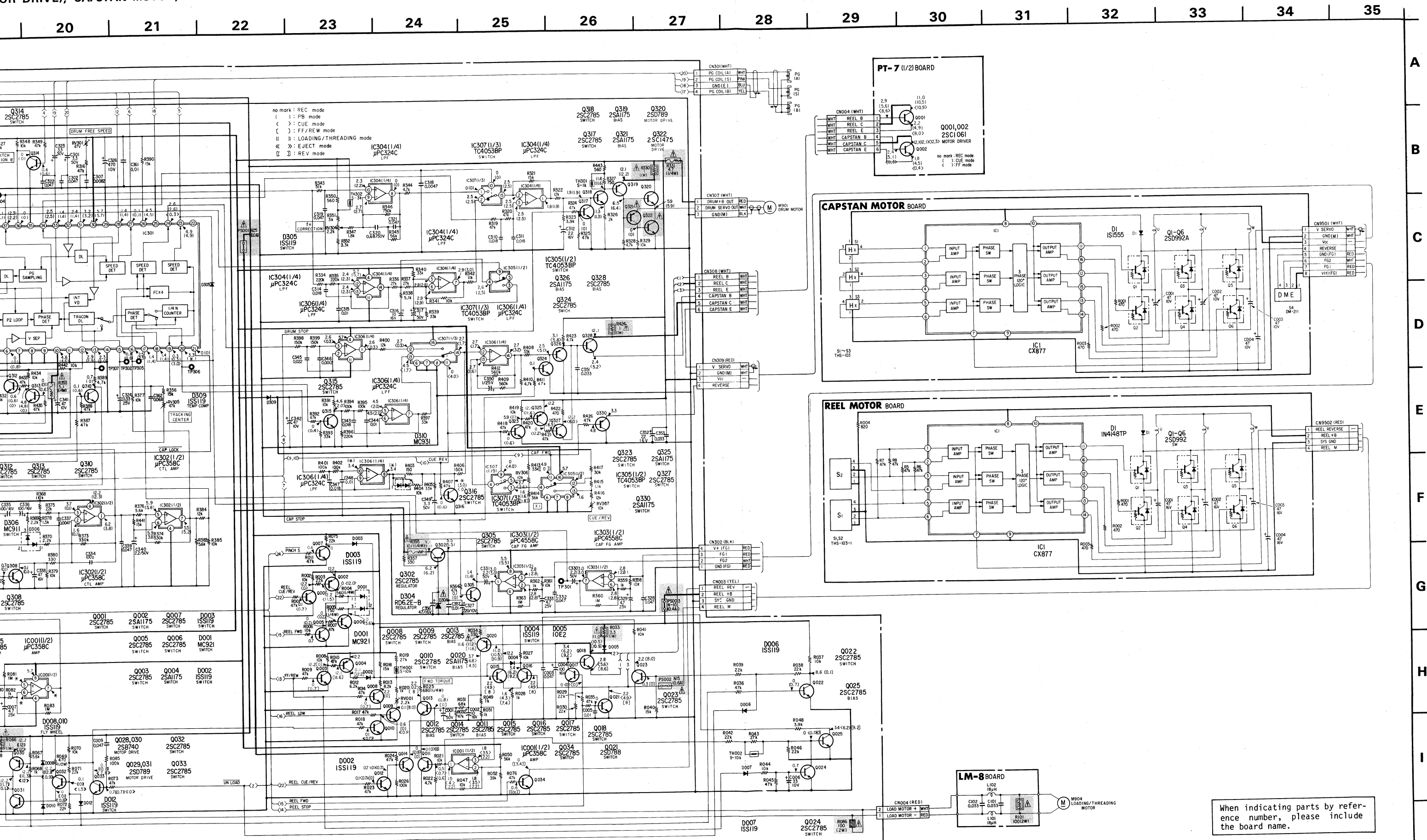
00 series, PT-7 BOARD : 7700 series, REEL MOTOR BOARD : 7500 series -

12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
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SERVO, SYSTEM CONTROL SERVO, SYSTEM CONTROL

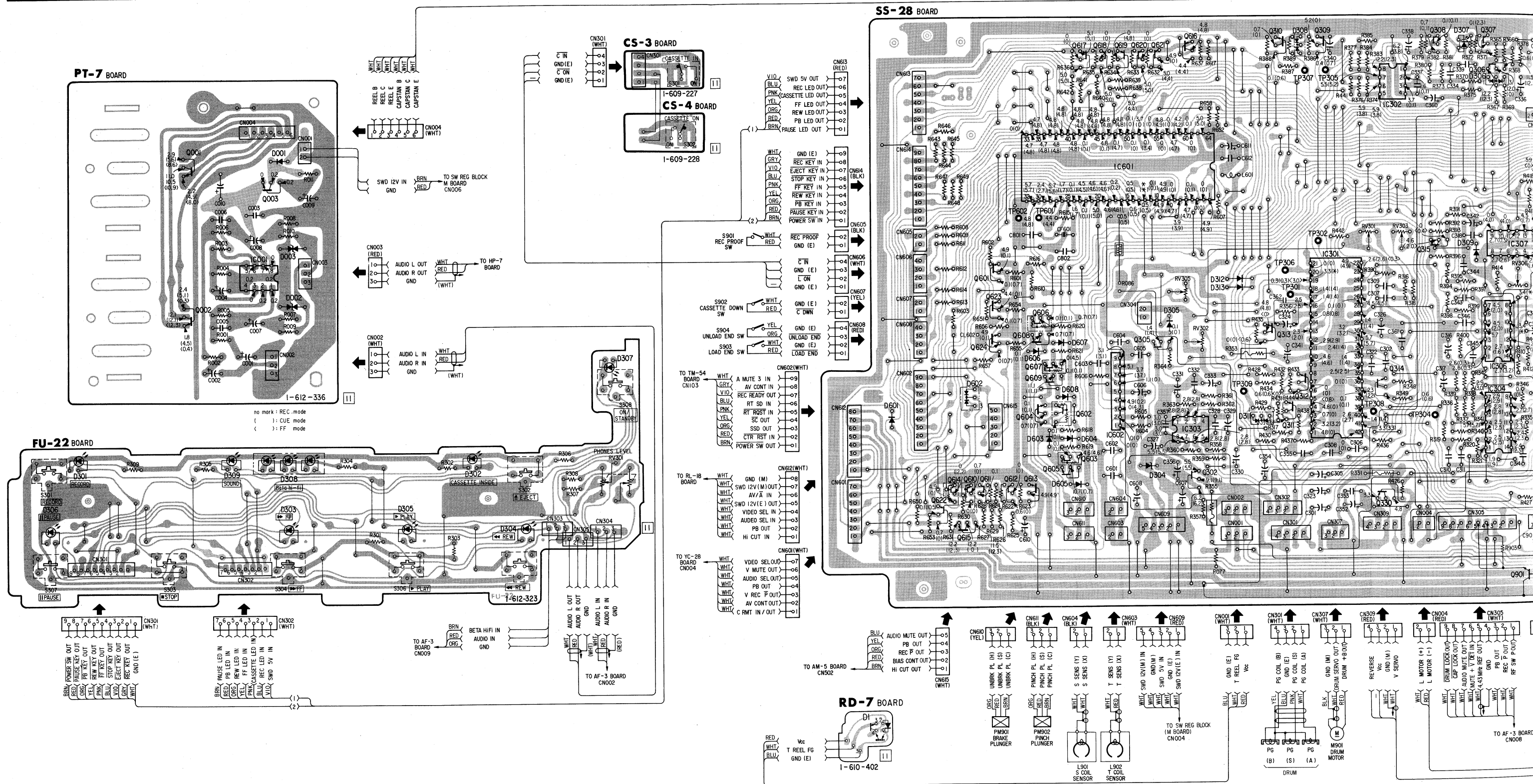
OR DRIVE). CAPSTAN MOTOR, REEL MOTOR SCHEMATIC DIAGRAM



SERVO, SYSTEM CONTROL SERVO, SYSTEM CONTROL

SS-28 (SERVO/SYSTEM CONTROL), FU-22 (FUNCTION SWITCH & IND), TR-14 (TRACKING CONTROL), RD-6 (ROTATION DETECTOR), RD-7 (ROTATION DETECTOR), LM-8 (NOISE FILTER), CS-3 (CASSETTE ON SWITCH), CS-4 (CASSETTE IN SWITCH),
 - Ref. No. SS-28 BOARD : 4000 series, FU-22 BOARD : 7300 series, TR-14 BOARD : 5700 series, RD-6 BOARD : 6700 series, RD-7 BOARD : 6800 series, LM-8 BOARD : 7100 series, CS-3, CS-4 BOARD : 6300 series, PT-7 BOARD : 7700 series, REEL MOTOR BOARD : 7500 series -

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Q, IC			001 002	003 IC001								601 623 624	606 608 607 609	617 618 619 IC601 IC602	620 621 305	616 IC303 302	310 313 311 312	309 IC301 314 330	IC302 308 315	307 306 IC306 IC304 901	IC307
D	306	301	309	001 308 303	003 002		302	304	307		601	602	606 607 608 603 605	610 611 612 613 604	622 614 615	305	310 311	309 307	306		
ADJ TP						305			RV301				TP602 TP601		RV305 RV302	TP309	TP306 TP301	TP307 TP302	RV301 RV308	RV303 TP304	RV306



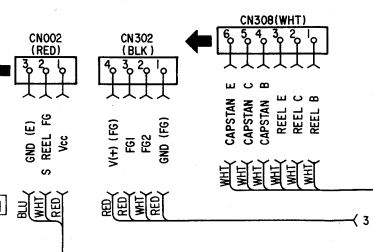
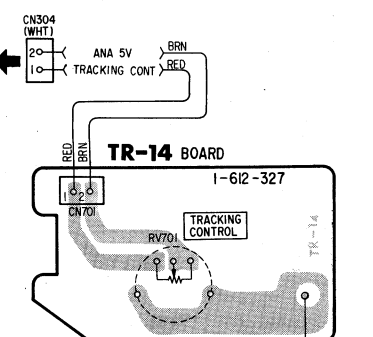
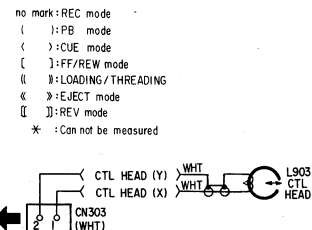
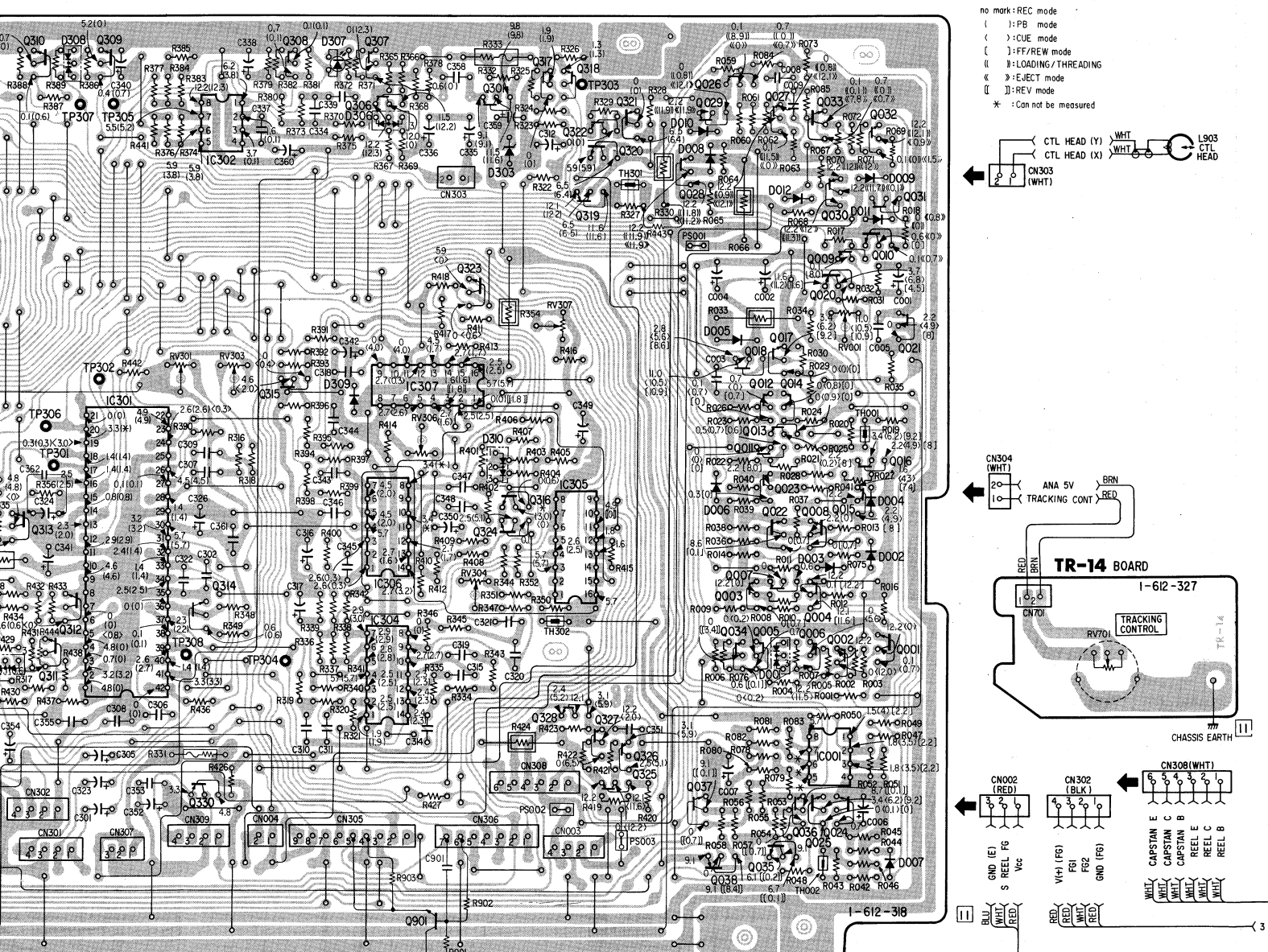
SERVO, SYSTEM CONTROL SERVO, SYSTEM CONTROL

ON SWITCH), CS-4 (CASSETTE IN SWITCH), PT-7 (REEL & CAPSTAN MOTOR DRIVE), CAPSTAN MOTOR, REEL MOTOR PRINTED WIRING BOARDS

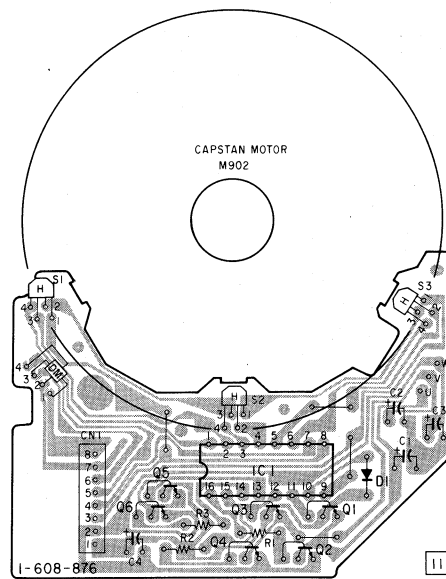
RD : 7500 series -

4	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

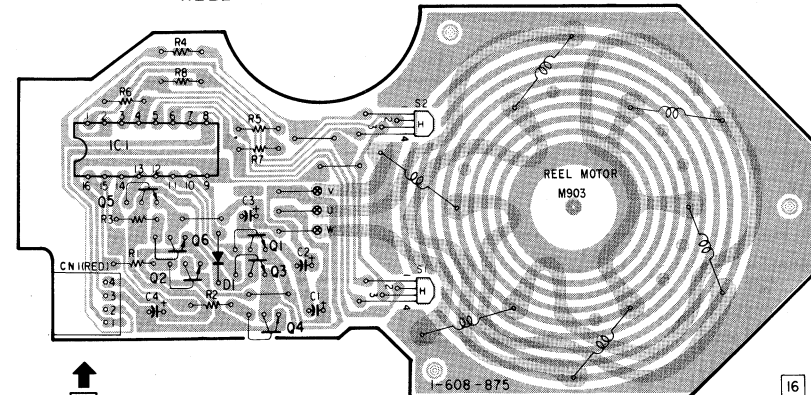
310	309	IC302	308	307	IC307	301	317 318	322	321	028 029	026	012	027	033	030	032	Q,IC
311	312	IC301	314	315	IC306	323	IC305	319 320	316	018	013	011	007	008	020	009	D
308			330		IC304	901	324	328 327	325	034	011	013	025	006	002	015	
				307				303	306	037	038	005	022	035	036	024	
								000	006,008	005		012	003	004	011	001	
										001				007			
TP306	TP307	TP305	RV301	RV303	TP304	RV306	RV307	TP303	RV001								ADJ
TP301	TP302		TP308						RV701								TP



CAPSTAN MOTOR BOARD



REEL MOTOR BOARD



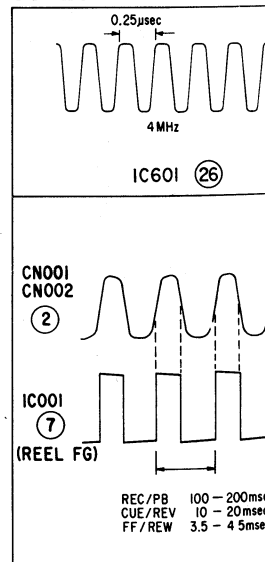
- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curves unless otherwise noted.
- : Nonflammable resistor
- : Fusible resistor
- : B + bus.
- The voltage value is a reference value between the ground when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10M).

Note: The components identified by shading and marking are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- : indicates a lead wire mounted on the component side
- : indicates a lead wire mounted on the printed side
- : soldering side
- : component side
- : B+ pattern

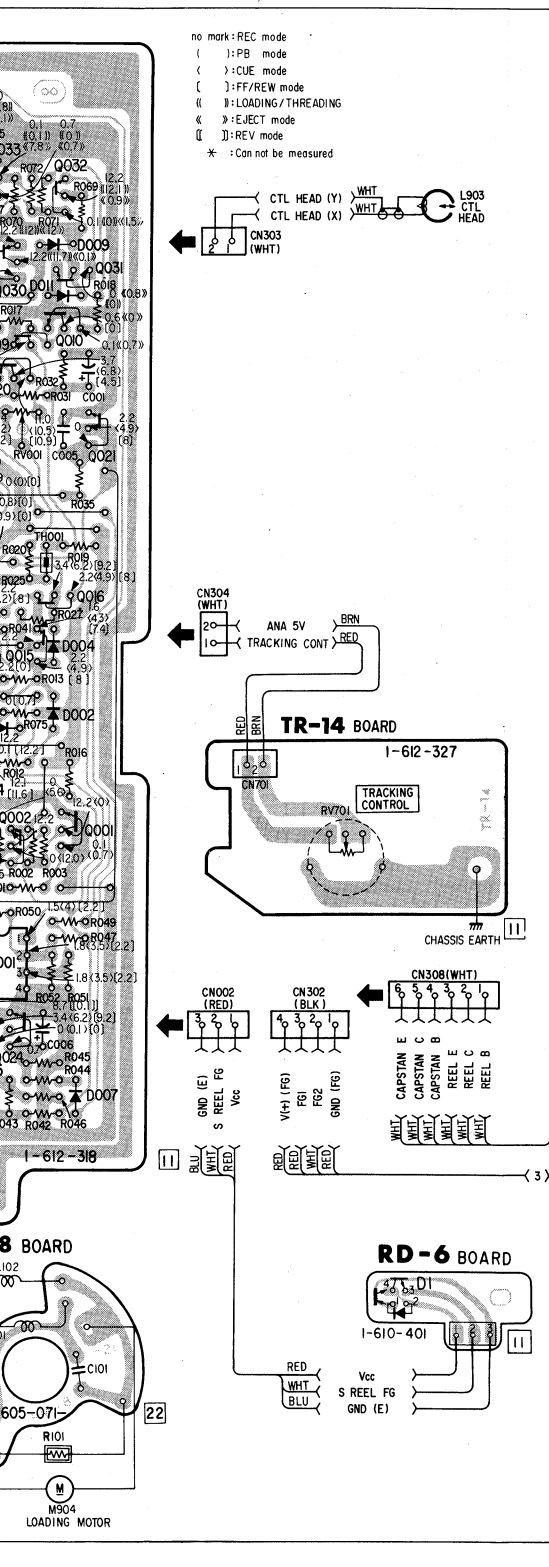
SS-28 (SYSTEM CONTROL) BOARD



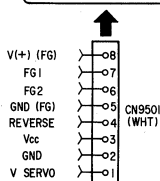
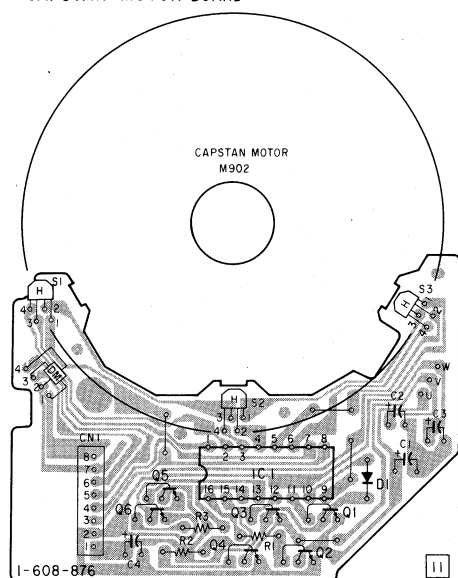
SERVO,SYSTEM CONTROL SERVO,SYSTEM CONTROL

IVE), CAPSTAN MOTOR, REEL MOTOR PRINTED WIRING BOARDS

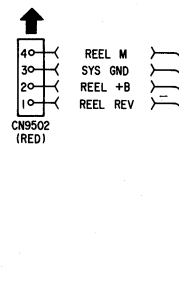
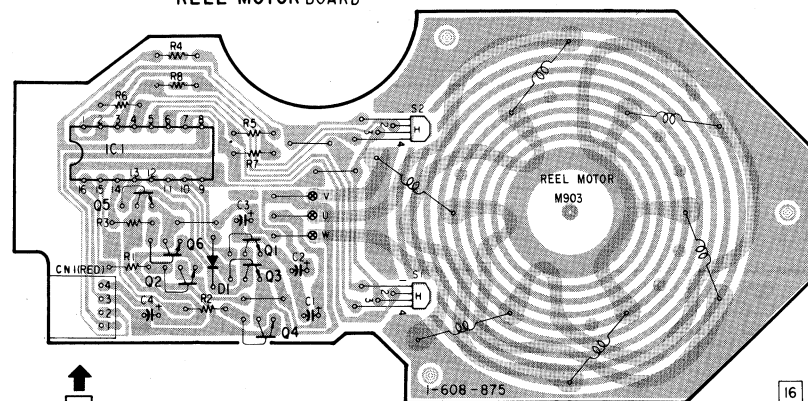
	20	21	22
033 008 004 006 036	030 020 002 016 024	032 031 010 021 001	Q,IC
003 004 002 007	011		D
001		RV701	ADJ TP



SERVO, SYSTEM CONTROL



REEL MOTOR BOARD



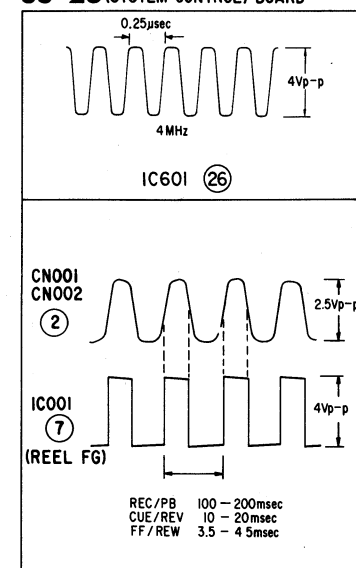
- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
-  : Nonflammable resistor
-  : Fusible resistor
-  : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10M Ω).

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

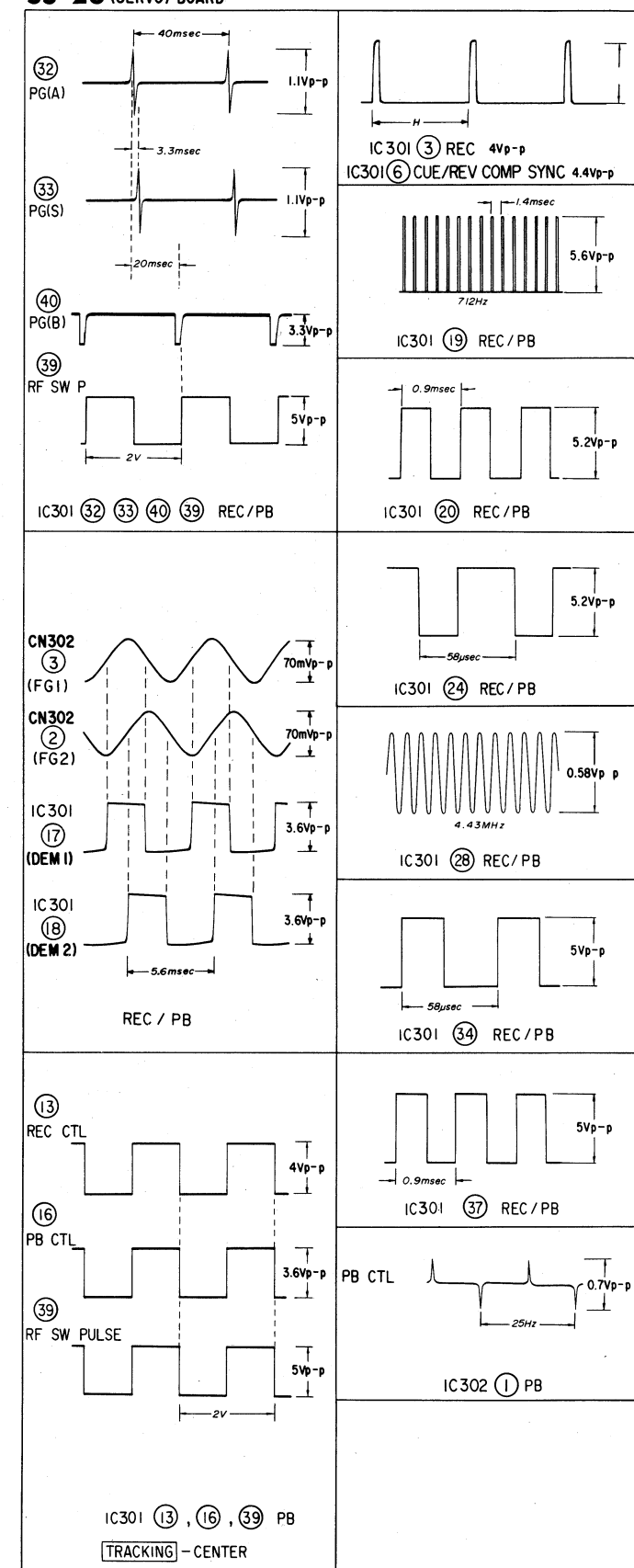
When indicating parts by reference number, please include the board name.

- ○ — : indicates a lead wire mounted on the component side.
- ● — : indicates a lead wire mounted on the printed side.
-  : soldering side
-  : component side
-  : B+ pattern

SS-28 (SYSTEM CONTROL) BOARD



SS-28 (SERVO) BOARD

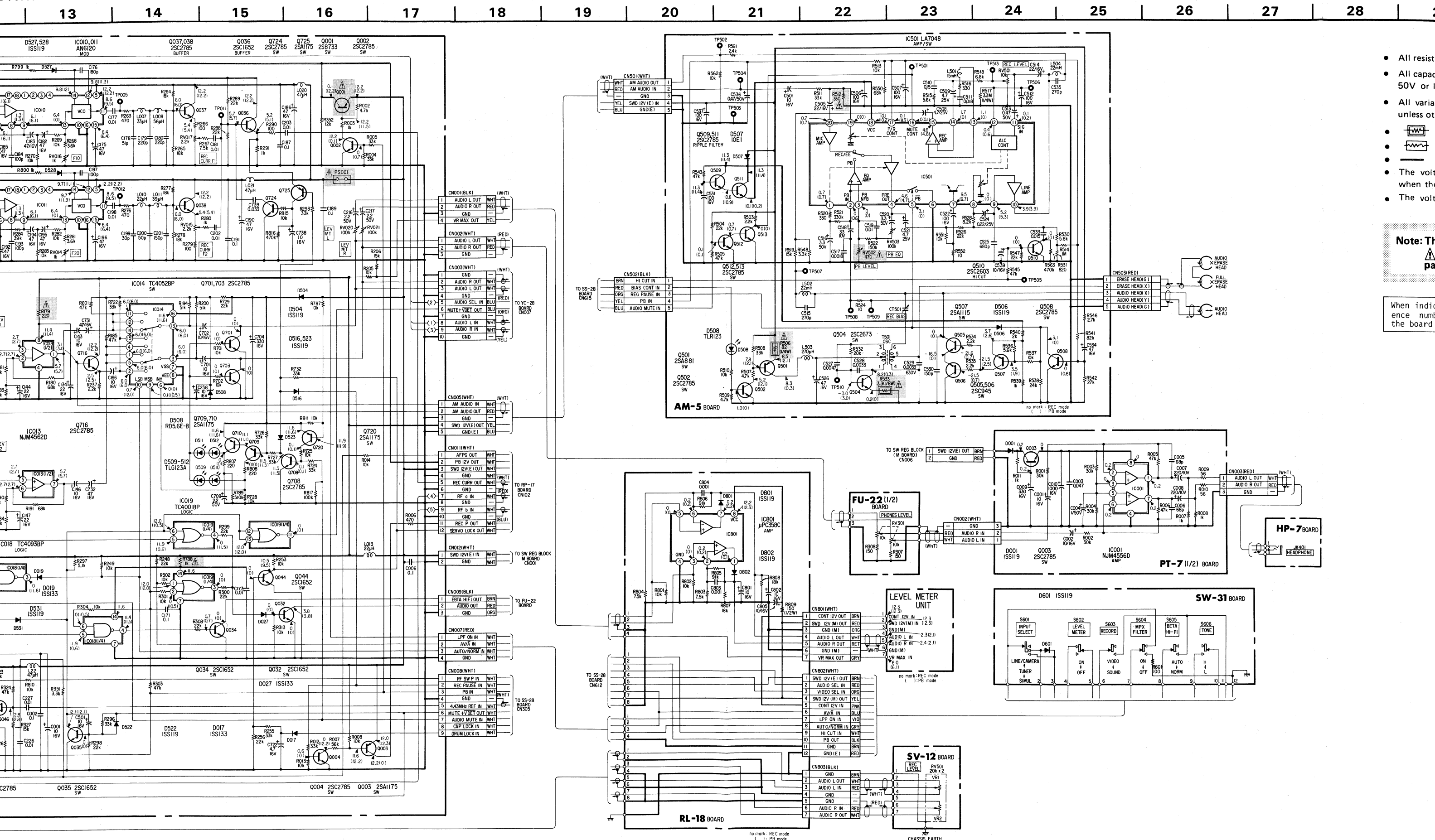


— Ref. No. AF-3 BOARD : 3000 series, AM-5 BOARD : 2500 series, RL-18 BOARD : 5800 series, FU-22 BOARD : 7300 series, PT-7 BOARD : 7700 series, HP-7 BOARD : 5400 series, SW-31 BOARD : 6600 series, SV-12 BOARD : 6500 series —



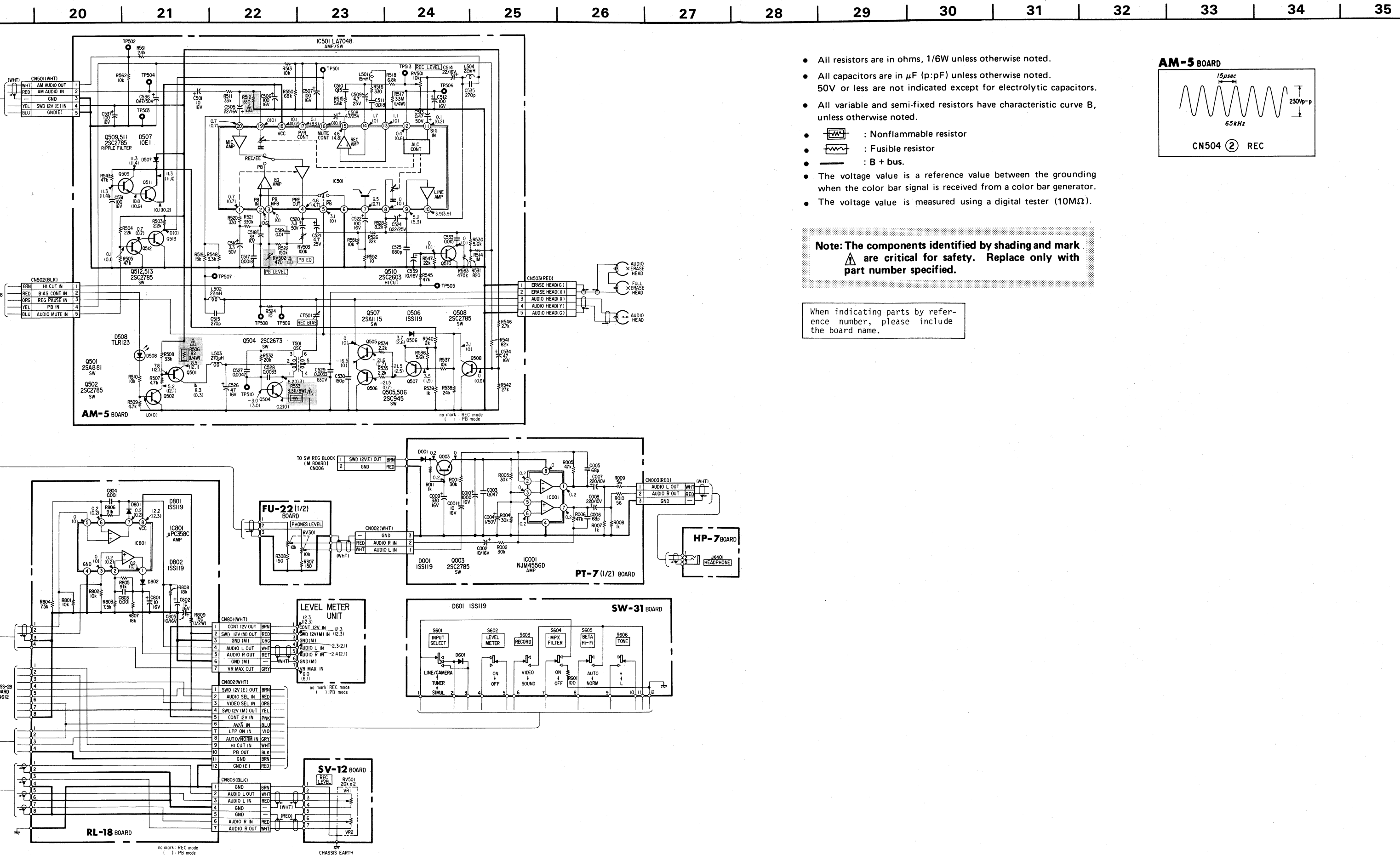
NE AMP), HP-7 (HEADPHONE JACK), SW-31 (FUNCTION SWITCH), SV-12 (AUDIO LEVEL), LEVEL METER UNIT SCHEMATIC DIAGRAM

D : 6500 series -



AUDIO AUDIO

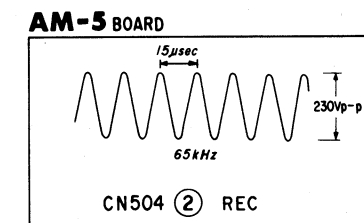
UNIT SCHEMATIC DIAGRAM



- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
-  : Nonflammable resistor
-  : Fusible resistor
-  : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10M Ω).

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

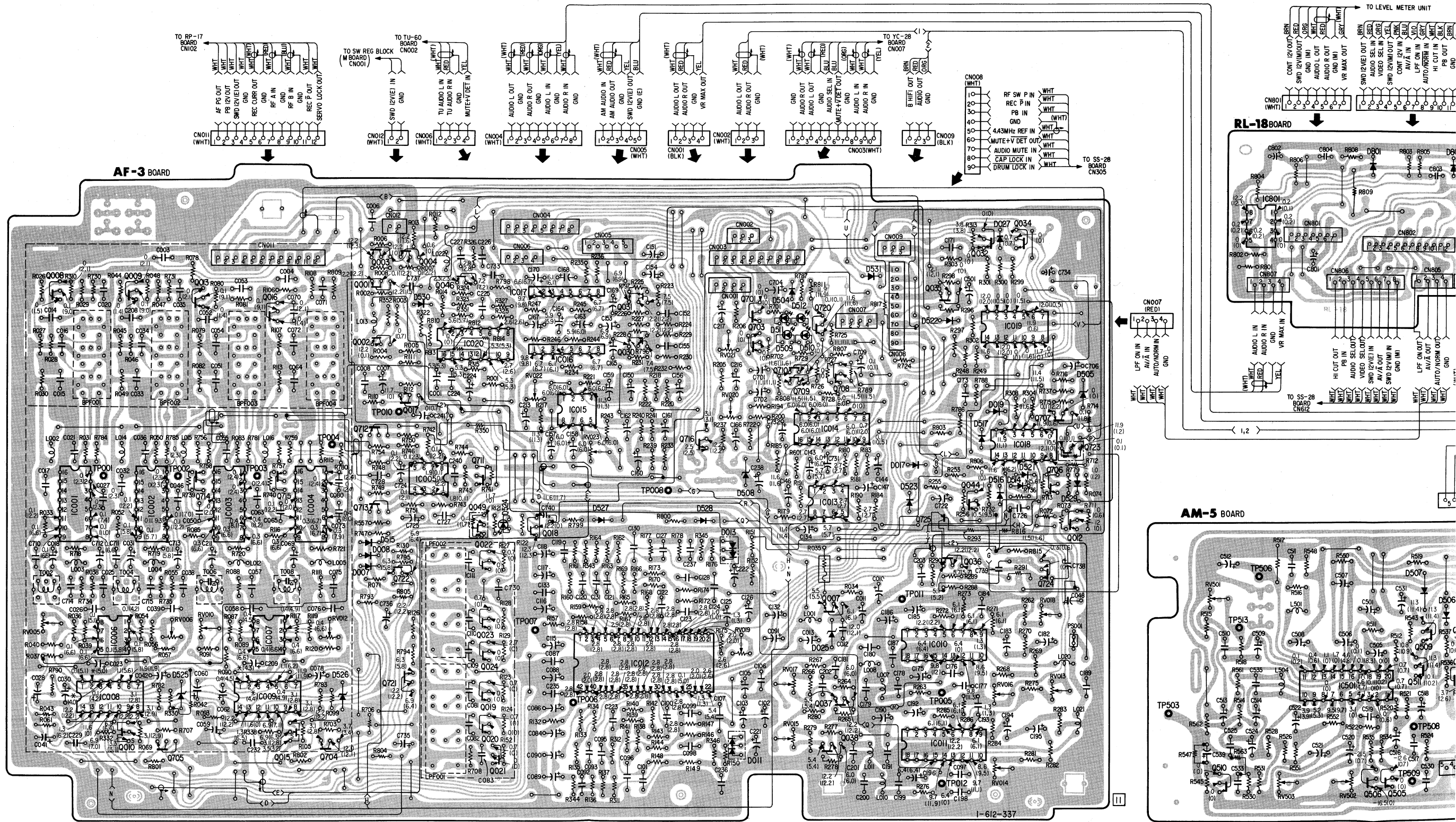
When indicating parts by reference number, please include the board name.



AUDIO AUDIO

AF-3 (AFM SIGNAL RECORD/PLAYBACK PROCESS), AM-5 (AUDIO SIGNAL REC/PB PROCESS), RL-18 (LEVEL METER DRIVE), FU-22 (HEADPHONE LEVEL), PT-7 (HEADPHONE AMP), HP-7 (HEADPHONE JACK), SW-31 (FUNCTION SWITCH), SV-12 (AU
- Ref. No. AF-3 BOARD : 3000 series, AM-5 BOARD : 2500 series, RL-18 BOARD : 5800 series, FU-22 BOARD : 7300 series, PT-7 BOARD : 7700 series, HP-7 BOARD : 5400 series, SW-31 BOARD : 6600 series, SV-12 BOARD : 6500 series -

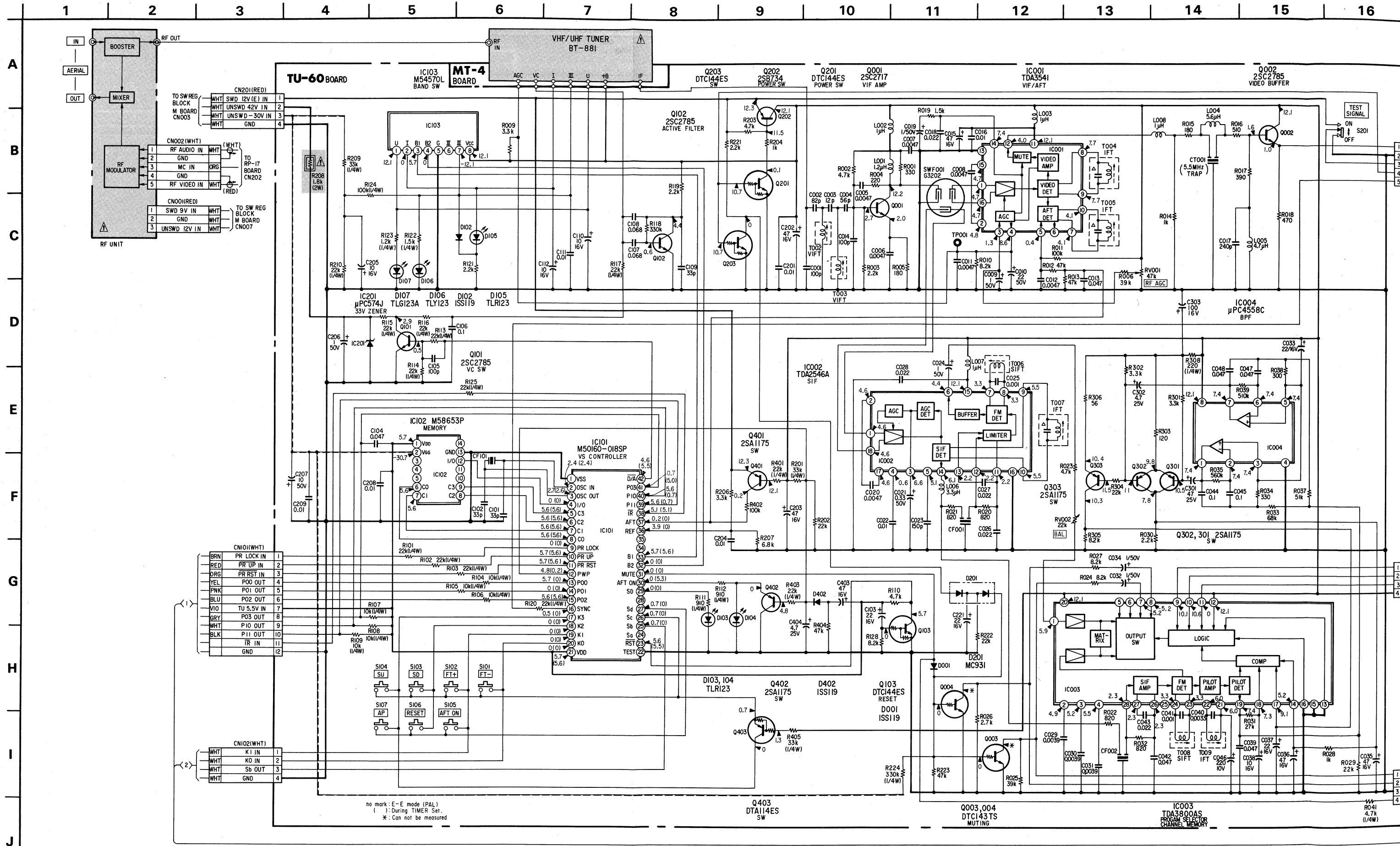
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Q	008	009	013	016	003	004	005	006	007	008	009	010	011	012	013	014
IC	IC001	IC002	IC003	IC004	IC005	IC006	IC007	IC008	IC009	IC010	IC011	IC012	IC013	IC014	IC015	IC016
D	RV005	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539
ADJ	TP001	TP002	TP003	TP004	TP005	TP006	TP007	TP008	TP009	TP010	TP011	TP012	TP013	TP014	TP015	TP016
TP	RV001	RV002	RV003	RV004	RV005	RV006	RV007	RV008	RV009	RV010	RV011	RV012	RV013	RV014	RV015	RV016



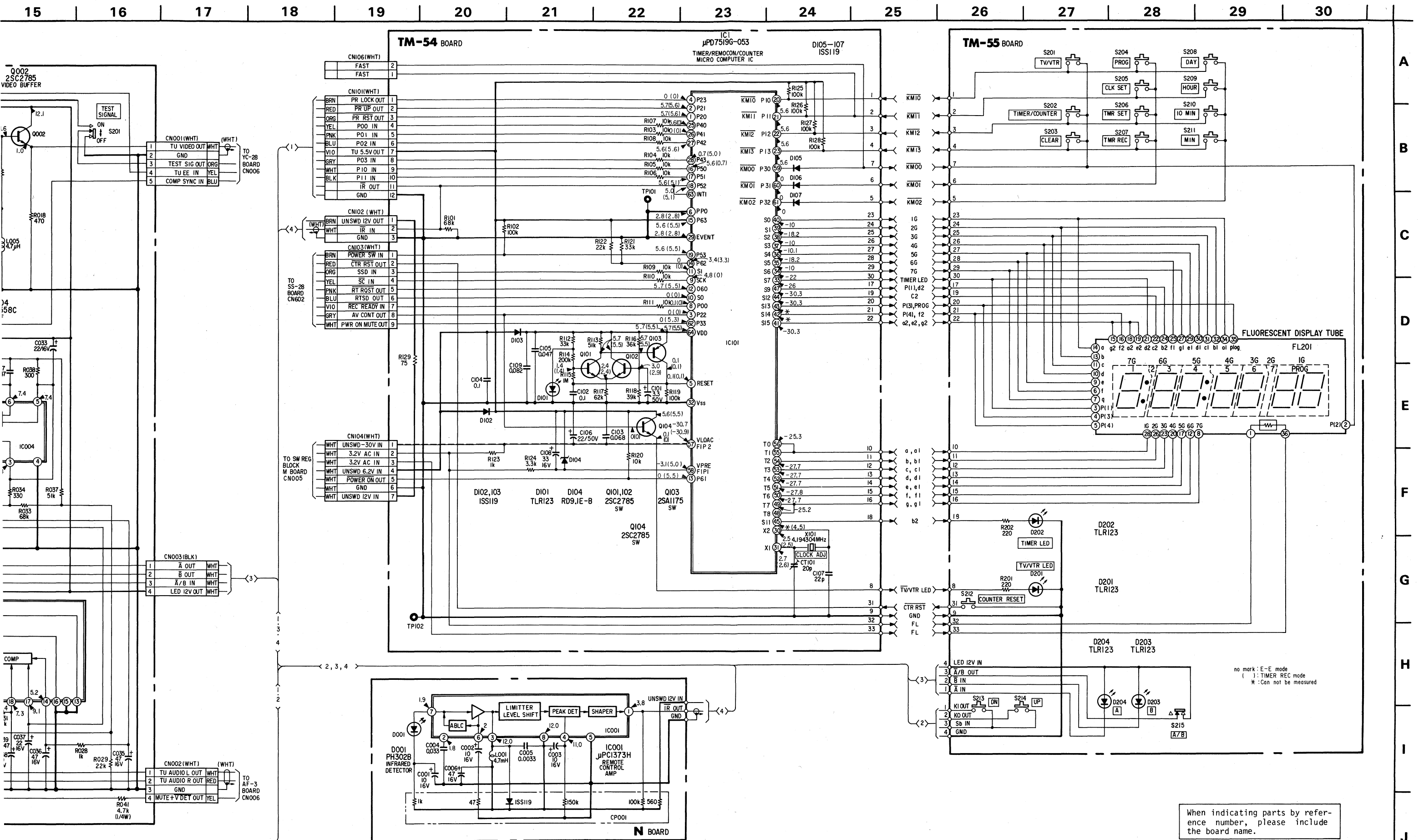
TUNER/TIMER TUNER/TIMER

4-5. TU-60 (VIF, SIF, AFT, AGC CHANNEL PRESET), MT-4 (TUNER), TM-54 (TIMER, REMOTE CONTROL, COUNTER), TM-55 (CHANNEL SWITCH, TIMER SWITCH), N (INFRARED AMP) SCHEMATIC DIAGRAM

- Ref. No. TU-60, MT-4 BOARD : 5000 series, TM-54 BOARD: 6100 series, TM-55 BOARD : 6200 series, N BOARD : 6400 series -

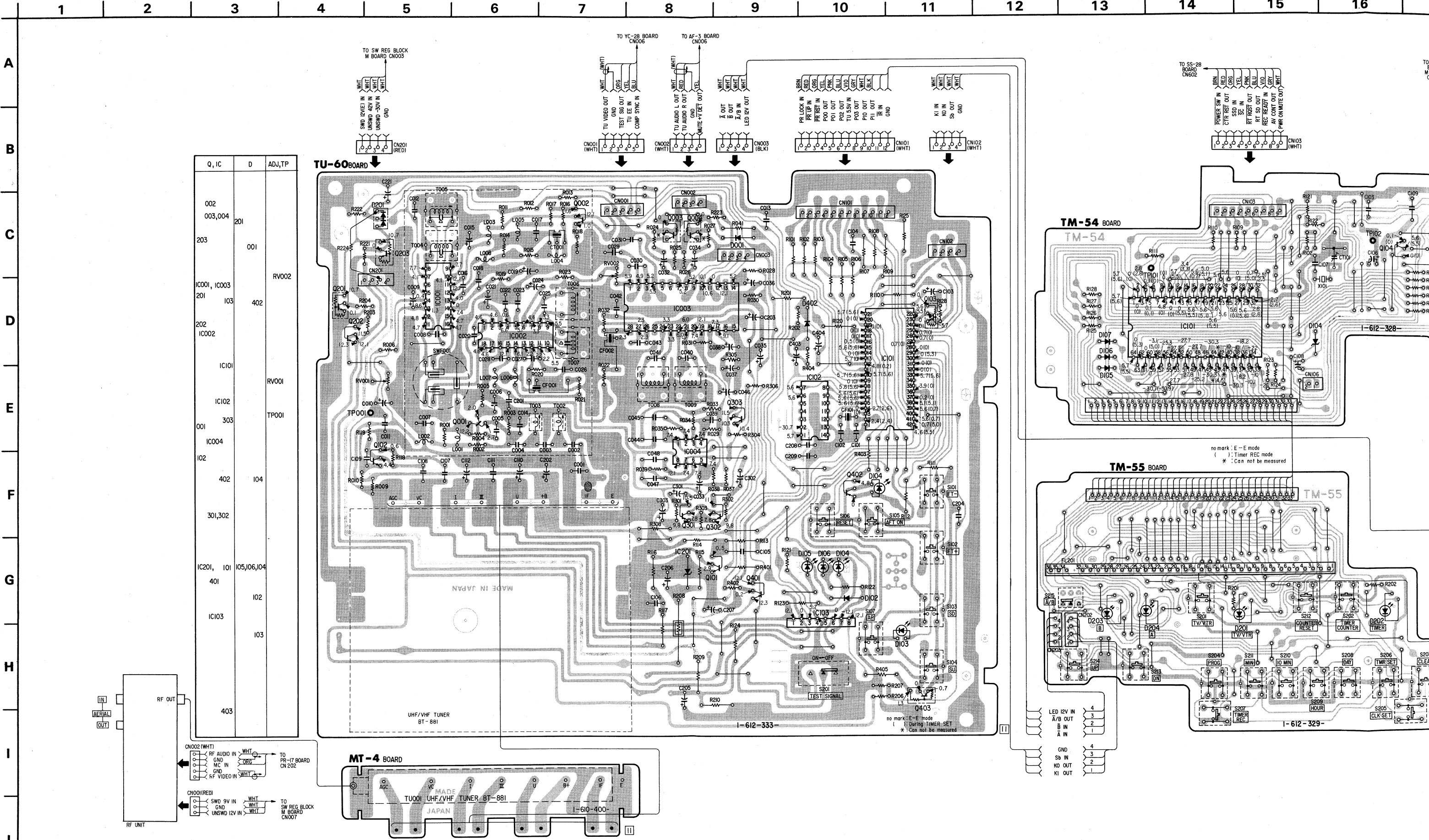


TUNER/TIMER TUNER/TIMER



TUNER/TIMER TUNER/TIMER

TU-60 (VIF, SIF, AFT, AGC CHANNEL PRESET), MT-4 (TUNER), TM-54 (TIMER, REMOTE CONTROL, COUNTER), TM-55 (CHANNEL SWITCH, TIMER SWITCH), N (INFRARED AMP) PRINTED WIRING BOARDS
 - Ref. No. TU-60, MT-4 BOARD : 5000 series, TM-54 BOARD : 6100 series, TM-55 BOARD : 6200 series, N BOARD : 6400 series -



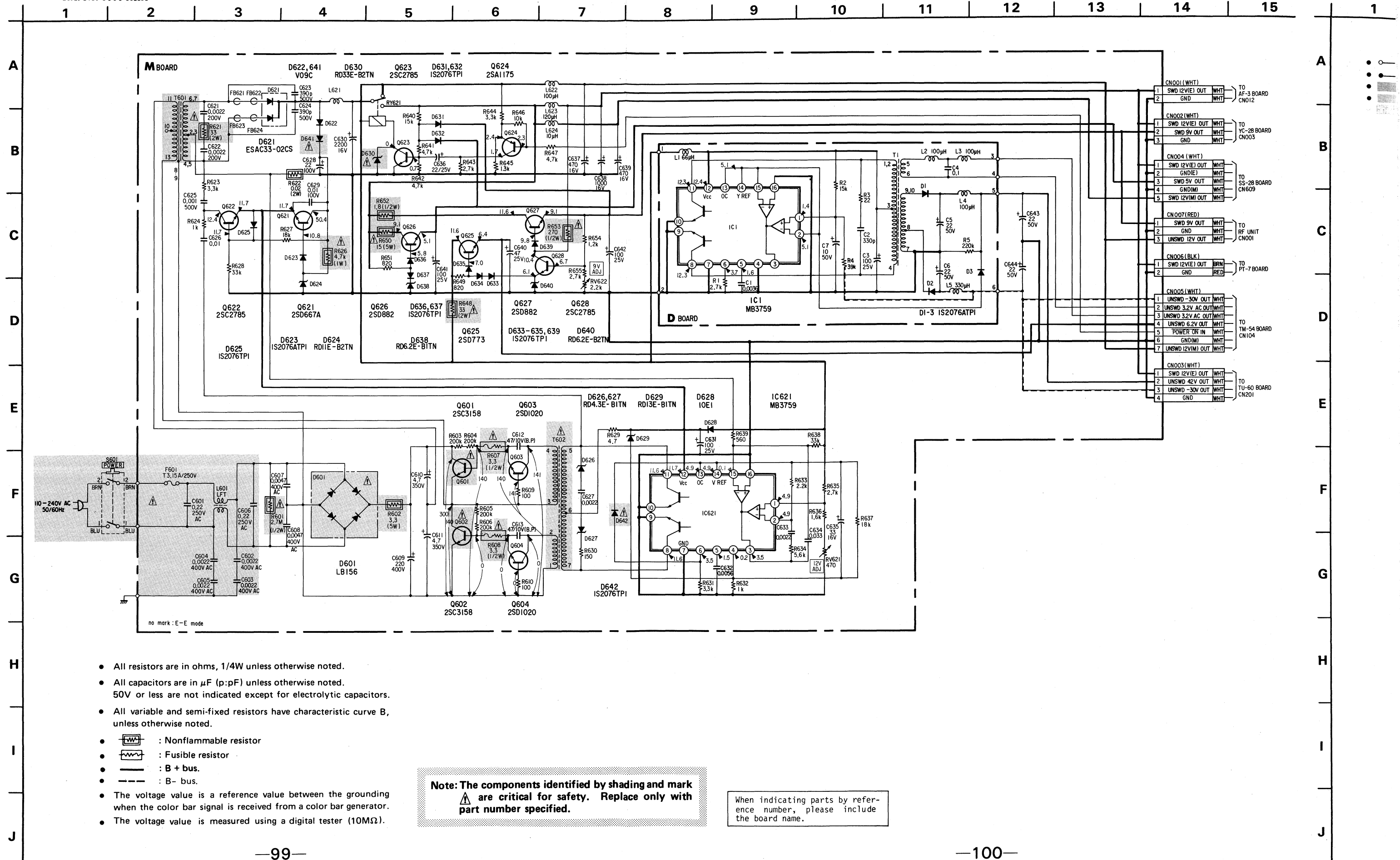
POWER SUPPLY POWER SUPPLY

4-6. SR-19E (POWER SUPPLY) SCHEMATIC DIAGRAM

— Ref. No. 8000 series —

SR-19E (POW

— Ref. No. 8000



15

1

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12

13

14

15

A

B

C

D

E

F

G

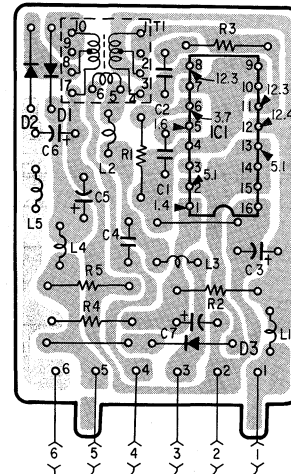
H

1

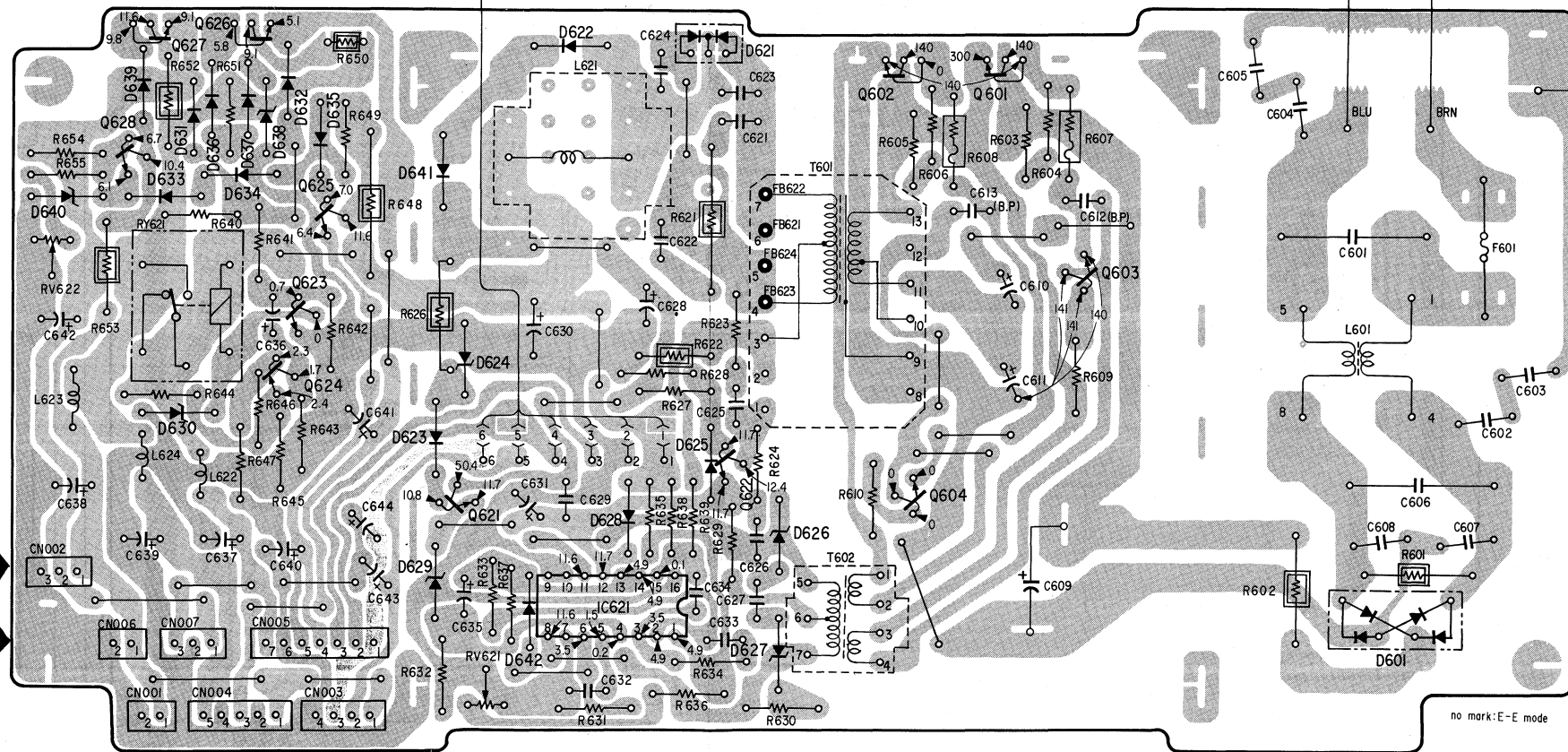
1

- — : indicates a lead wire mounted on the component side.
- — : indicates a lead wire mounted on the printed side.
- ■ : soldering side
- ■ : B+ pattern
- ■ : B- pattern

D BOARD



IC	D
ICI	2,1
	3

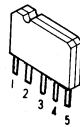
M BOARD

Q, IC	D	ADJ
627	622	
626	621	
602		
601	639, 631	
	636, 637	
628	638, 632	
	635	
	641	
625	634	
	640, 633	
		RV622
603		
623		
624		
	624-	
	630	
	623	
	625	
622		
604	628	
621	626	
	629	
IC621	642	
	627	
	601	
		RV621

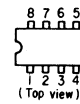
When indicating parts by reference number, please include the board name.

4-7. SEMICONDUCTORS

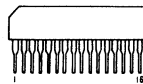
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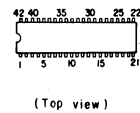
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HA17558
NJM4556D
NJM4558D
NJM4562D
μPC358C
μPC393C
μPC4558C



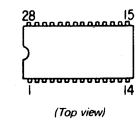
BA7007



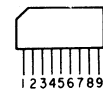
CX194B-0
CX194B-5
CX10021
CX20097
M50160-018SP



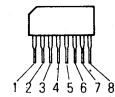
CX866A
CX20045



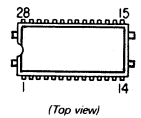
CX894
LA7205



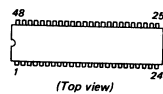
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CX20061
M54570L
μPC1373H



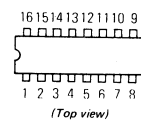
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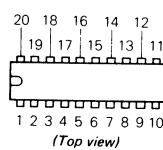
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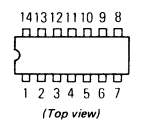
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MB3759
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TC4052BP
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TDA3541
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μPD4053BC



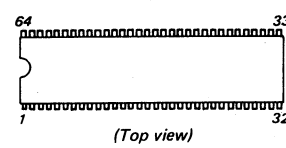
LA7048



M58653P
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TC4001BP
TC4066BP
TC4093BP
μPC324C



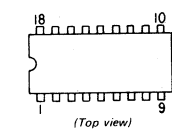
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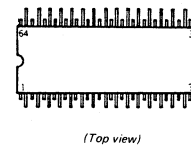
TA7060AP



TDA2546A



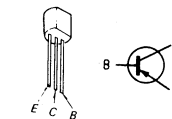
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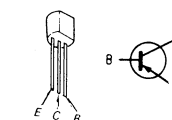
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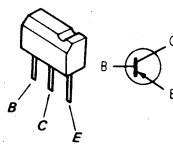
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2SA844
2SA844-C



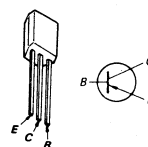
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2SB740



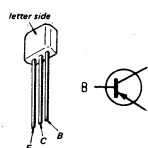
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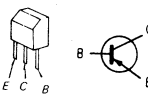
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2SA1115



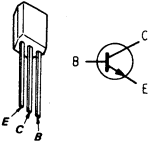
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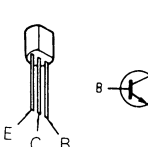
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2SB734



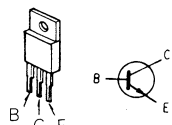
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2SC2458
2SC2603



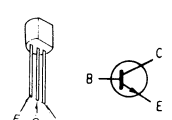
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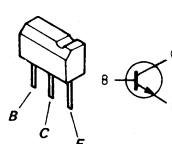
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2SC2216
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2SD313HP



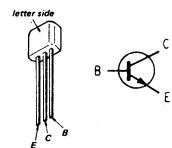
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2SD667A
2SD788
2SD789



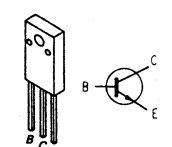
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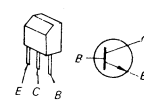
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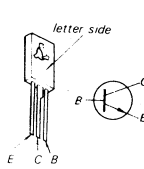
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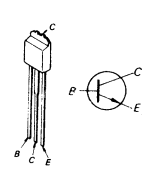
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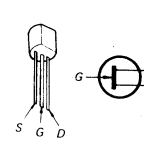
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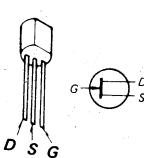
2SD1164



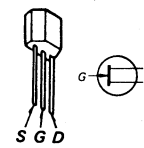
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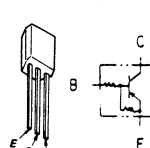
2SK152



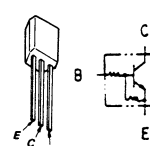
2SK514
2SK514-H



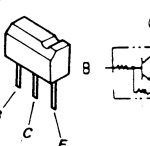
DTA114ES



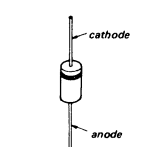
DTC124ES
DTC143TS
DTC144ES
DTC144WS



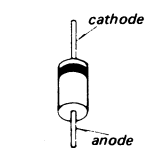
DTC144EF



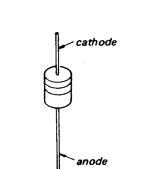
10E1
10E2



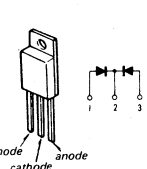
1S1555
1S2076
1S2076ATP1
1S2473
1SS106
H2T33-02
RD4.3E-B1TN
RD5.6E-B
RD6.2E-B
RD6.2E-B1TN
RD6.2E-B2TN
RD7.5E-B
RD9.1E-B
RD10E-B1
RD10E-B2
RD11E-B2TN
RD13E-B1TN
RD33E-B2TN



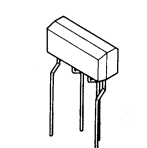
1SS119
1SS133
1SS148



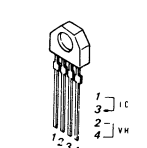
ESAC33-02CS



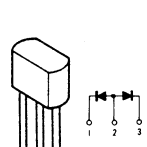
LB-156



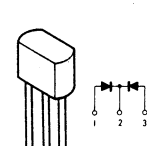
LT-9230N



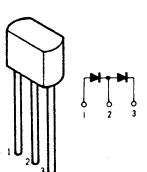
MC911



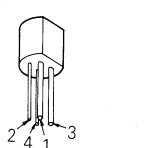
MC921



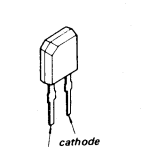
MC931



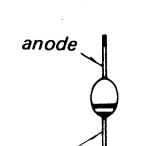
GP-2S02A



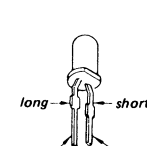
PH302B



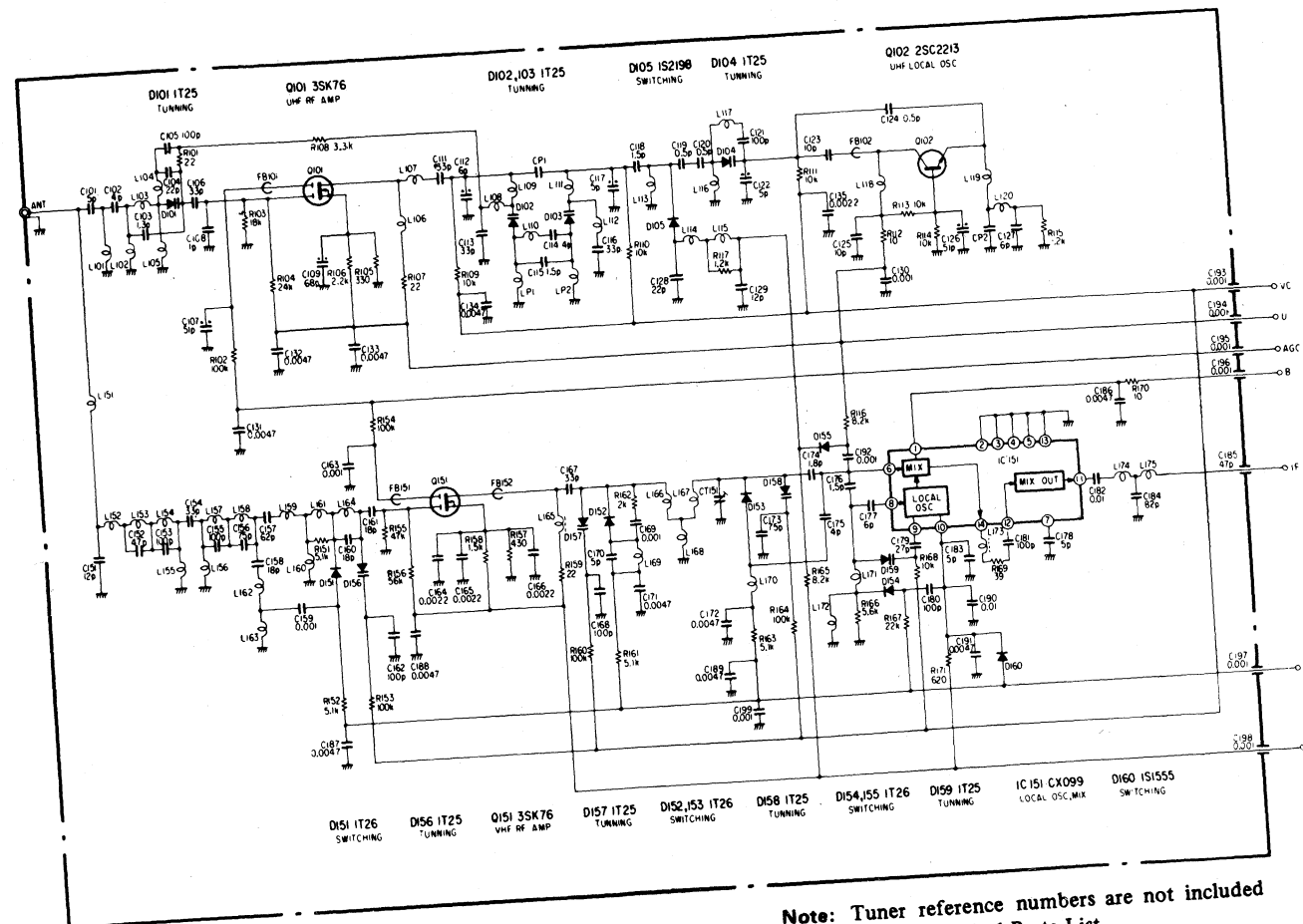
V09C



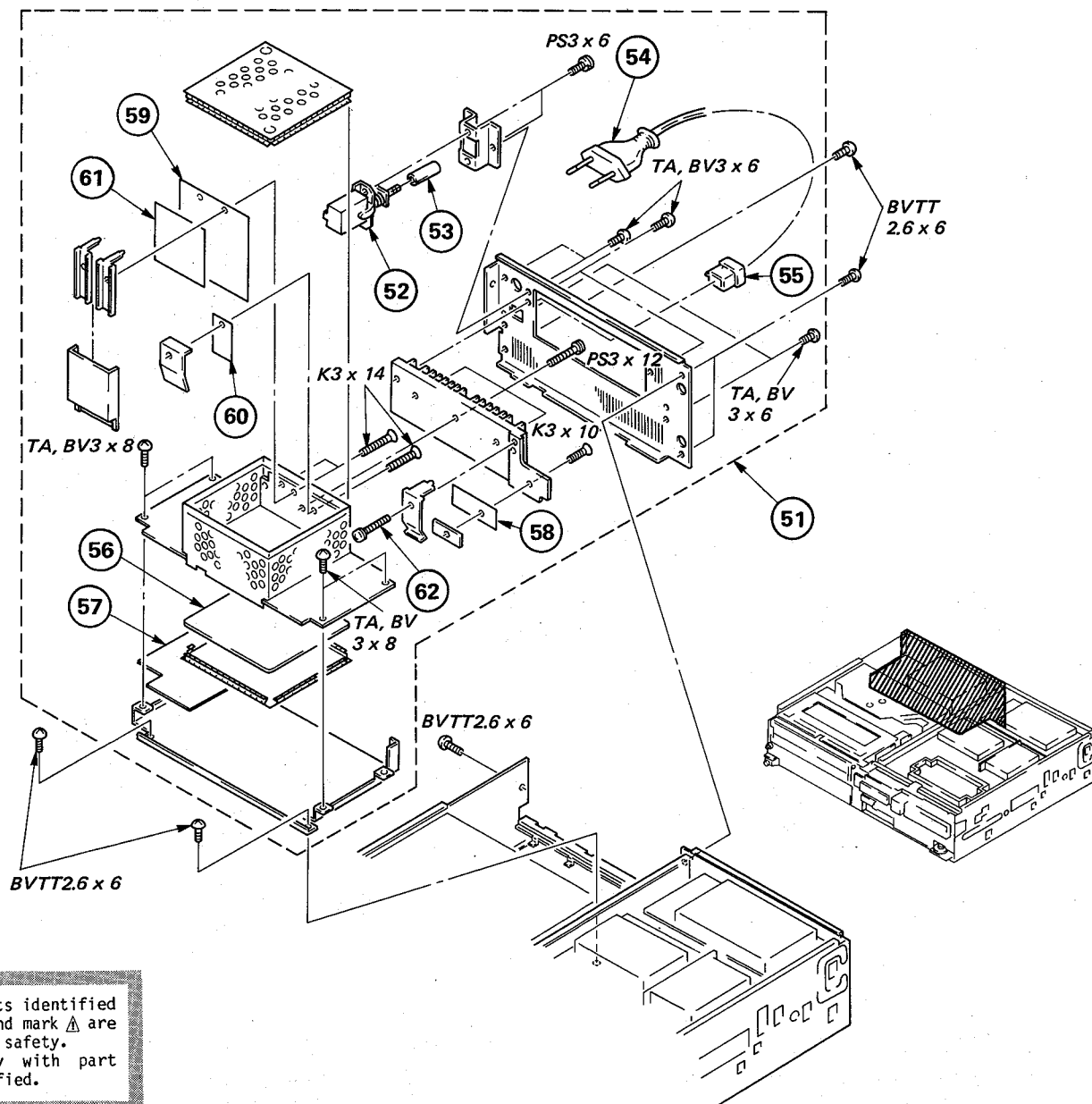
TLG123A
TLO123
TLR123
TLR124
TLY123



4-8. UHF AND VHF TUNER SCHEMATIC DIAGRAM — BT-881 tuner —

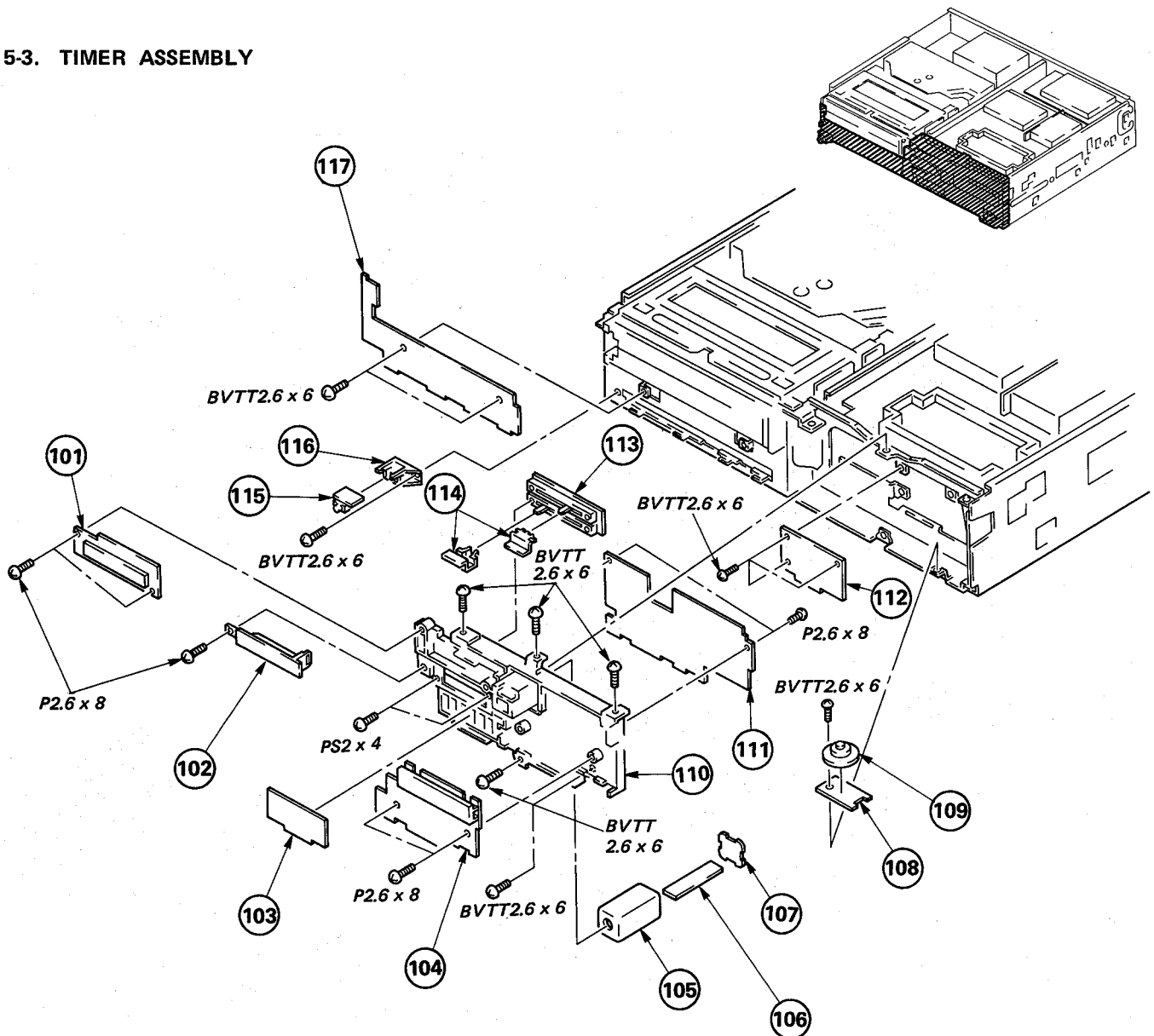


5-2. POWER ASSEMBLY



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	Δ 1-413-171-11	SWITCHING REGULATOR (SR-19E)	52-62	57	Δ 2-430-375-01	SHEET B, INSULATING	
52	Δ 1-552-903-12	PUSH SWITCH	S601	58	2-430-383-01	RUBBER, INSULATING	
53	4-334-115-01	CLOCK-D-KNOB		59	Δ 2-430-342-01	RUBBER, INSULATING	
54	Δ 1-534-817-31	POWER CORD		60	2-430-269-01	RUBBER, INSULATING	
55	Δ 3-703-244-02	CODE-STOPPER		61	2-430-209-01	RUBBER, INSULATING	
56	Δ 2-430-374-01	SHEET A, INSULATING		62	2-434-060-01	+M3x18	

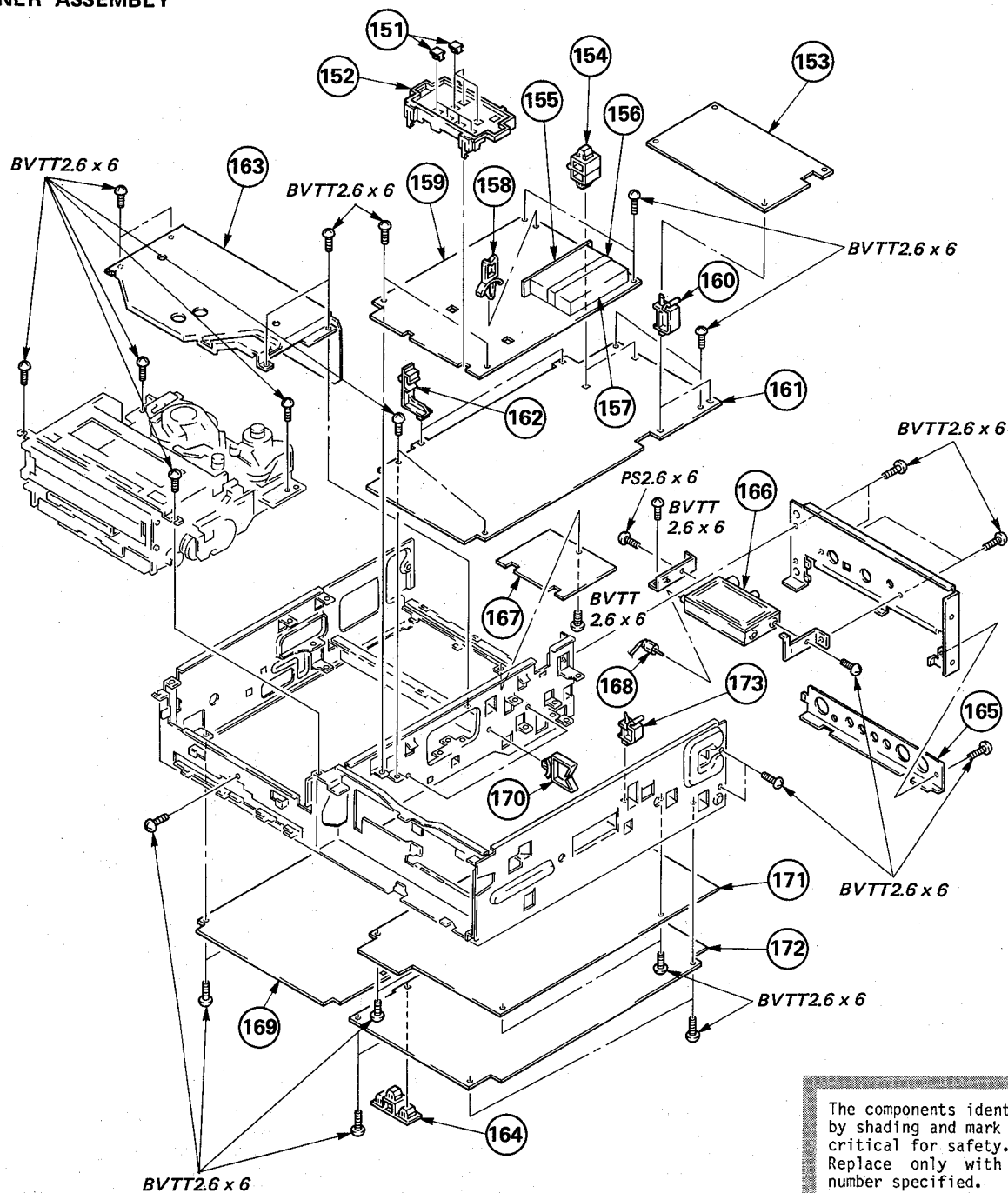
5-3. TIMER ASSEMBLY



No.	Part No.	Description
101	1-520-470-11	METER UNIT, LEVEL
102	3-684-046-01	SCALE, DIAL
103	♣:1-612-326-11	PC BOARD, SW-31
104	♣:A-6728-996-A	MOUNTED PCB, TM-55
105	♣:4-342-117-00	CASE, SHIELD (MAIN), R
106	♣:1-606-794-00	PC BOARD, N
107	♣:4-342-118-00	LID, SHIELD CASE, R
108	♣:1-612-327-11	PC BOARD, TR-14
109	3-684-012-01	KNOB, TRACK CONTROL

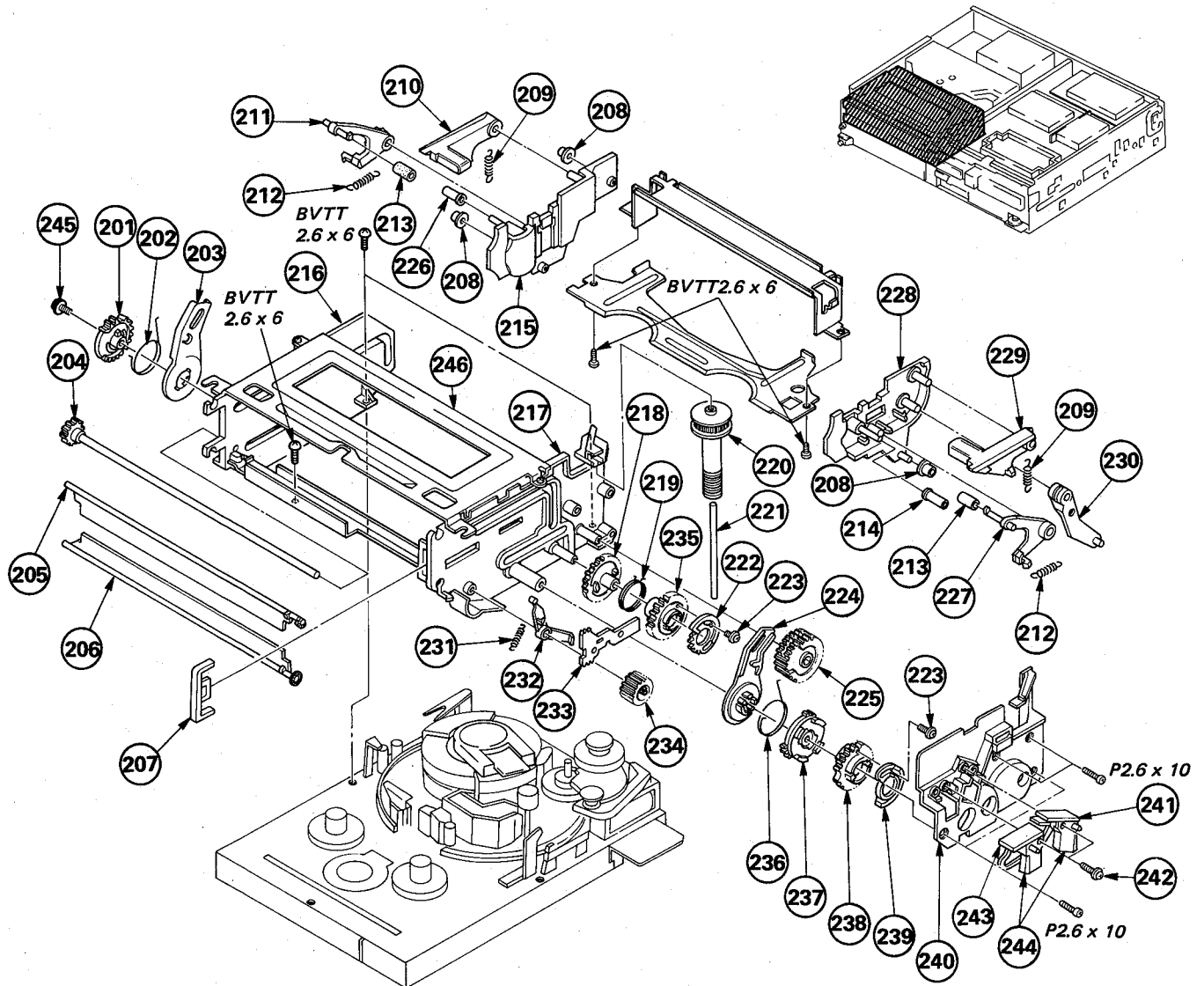
Remark	No.	Part No.	Description	Remark
	110	♣:3-684-054-02	BRACKET, TM	
	111	♣:A-6728-995-A	MOUNTED PCB, TM-54	
	112	♣:1-612-330-11	PC BOARD, RL-18	
	113	♣:1-612-325-11	PC BOARD, SV-12	
	114	3-684-031-02	KNOB, REC SLIDE	
	115	♣:1-612-324-11	PC BOARD, HP-7	
	116	♣:3-684-029-03	HOLDER, HP	
	117	♣:1-612-323-11	PC BOARD, FU-22	

5-4. TUNER ASSEMBLY



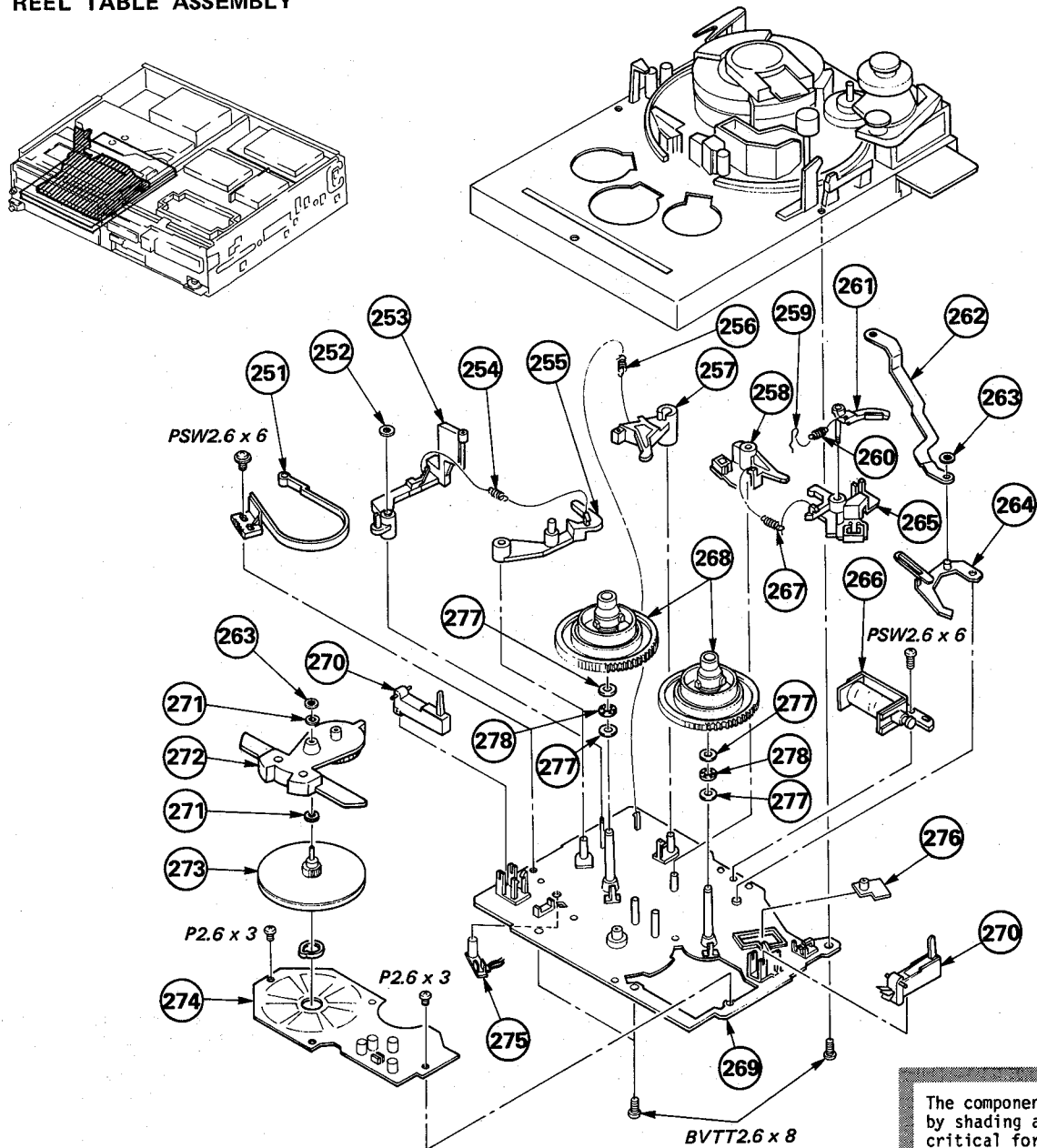
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
151	3-662-243-00	BUTTON, PRESET		163	Δ:X-3684-017-1	COVER ASSY, DRUM	
152	3-684-047-01	COVER, PRESET		164	Δ:3-681-184-00	HOLDER, PC BOARD	
153	Δ:A-6713-203-A	COMPLETE PCB, AM-5		165	Δ:3-681-114-21	PANEL, CONNECTOR	
154	Δ:3-682-080-00	HINGE (A), PCB		166	Δ:1-464-270-12	BOOSTER, RF MODULATOR(RFU-808E)	
155	Δ:1-610-400-00	PC BOARD, MT-4		167	Δ:A-6023-241-A	COMPLETE PCB, PT-7	
156	Δ:3-681-220-00	BAND, RETAINER, TUNER		168	Δ:1-556-934-00	CABLE, PIN	
157	Δ:1-463-350-00	TUNER (BT-881)		169	Δ:A-6711-528-A	COMPLETE PCB, RP-17	
158	Δ:3-644-407-00	CLIP, AC WIRE E		170	Δ:3-655-214-00	CLIP, CABLE	
159	Δ:A-6721-201-A	COMPLETE PCB, TU-60	155,156,157	171	Δ:A-6715-224-A	COMPLETE PCB, SS-28	
160	Δ:3-682-047-01	HOLDER (A), PC BOARD		172	Δ:A-6711-527-A	COMPLETE PCB, YC-28	
161	Δ:A-6713-200-A	COMPLETE PCB, AF-3		173	Δ:3-675-530-00	SUPPORT, PC	
162	Δ:3-682-612-00	CLIP (B), ANCHOR					

5-5. FRONT LOADING ASSEMBLY



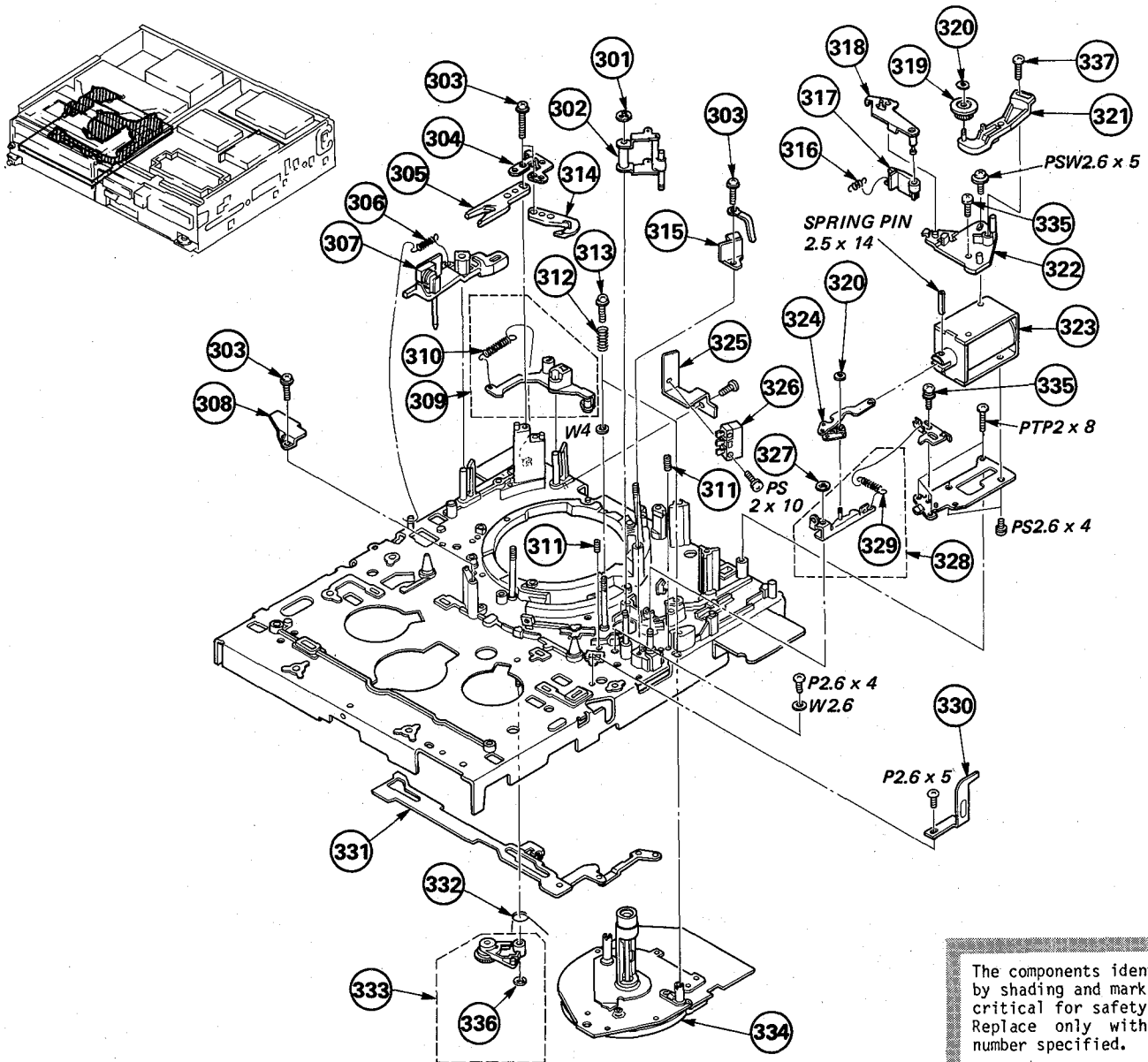
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
201	3-679-226-00	GEAR (LEFT), ARM, DRIVING		224	3-679-219-00	ARM (RIGHT), DRIVING	
202	3-679-145-00	SPRING (LEFT)		225	3-679-216-00	WHEEL, WORM	
203	3-679-220-00	ARM (LEFT), DRIVING		226	3-679-316-00	ROLLER (LEFT), DRIVING	
204	X-3679-105-0	SHAFT ASSY, GEAR, MIDWAY		227	3-679-129-00	LEVER(RIGHT), RETAINER, CASSETTE	
205	3-679-222-05	DOOR, UPPER		228	▲:X-3679-106-0	PLATE ASSY, SIDE, BASE RIGHT	
206	3-679-223-05	DOOR, LOWER		229	3-679-131-00	LEVER (RIGHT), PREVENTION	
207	3-679-137-00	HOLDER, OUTER DOOR		230	3-679-133-00	ARM, LID OPEN	
208	3-679-143-00	ROLLER		231	3-679-189-00	SPRING, TENSION	
209	3-679-188-00	SPRING, TENSION		232	3-679-134-00	ARM, SWITCHING, DOOR	
210	3-679-132-00	LEVER (LEFT), PREVENTION		233	3-679-221-03	PLATE, RACK, SWITCHING, DOOR	
211	3-679-130-00	LEVER (LEFT), RETAINER, CASSETTE		234	3-679-126-00	GEAR (RIGHT), MIDWAY	
212	3-679-288-00	SPRING, TENSION		235	3-679-218-00	GEAR (B), LIMITER	
213	3-679-135-00	RUBBER, RETAINER, CASSETTE		236	3-679-144-00	SPRING (RIGHT)	
214	3-679-128-00	ROLLER (RIGHT), DRIVING		237	3-679-225-00	GEAR (RIGHT), ARM, DRIVING	
215	▲:X-3679-107-0	PLATE ASSY, SIDE, BASE LEFT		238	3-679-125-00	GEAR, DRIVING	
216	▲:3-679-266-00	PLATE, SIDE, LEFT		239	3-679-138-00	CAM (CASSETTE ON)	
217	▲:3-679-265-00	PLATE, SIDE, RIGHT		240	▲:3-679-214-00	HOLDER, GEAR, WORM	
218	3-679-217-04	GEAR (A), LIMITER		241	▲:1-609-227-11	PC BOARD, CS-3	
219	3-679-139-00	SPRING		242	3-669-480-00	+ PTPWH 2	
220	3-679-215-00	GEAR, WORM		243	▲:1-609-228-11	PC BOARD, CS-4	
221	3-679-123-00	SHAFT, GEAR, WORM		244	1-554-241-00	SWITCH, LEVER	
222	3-679-124-00	CAM (CASSETTE OFF)		245	3-683-421-01	SCREW (+ PTPWH)(2.6X8)	
223	3-669-480-21	+ PTPWH 2		246	▲:3-682-626-00	PLATE, TOP	

5-6. REEL TABLE ASSEMBLY



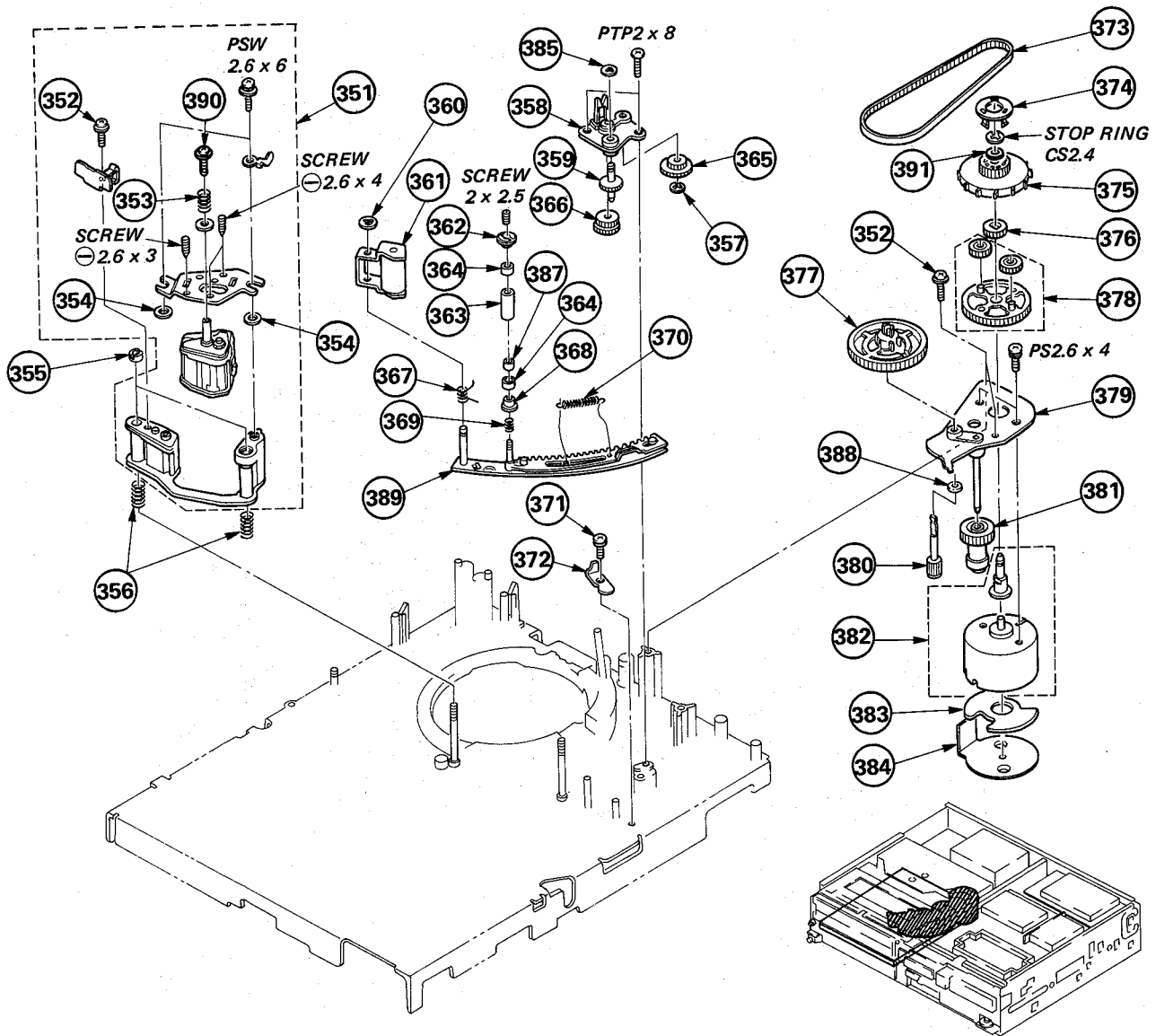
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
251	X-3679-120-0	BAND ASSY, TENSION REGULATOR		265	X-3679-118-0	BRAKE ASSY, T	
252	3-669-465-00	WASHER (1.5), STOPPER		266	Δ 1-454-348-31	SOLENOID, BRAKE PLUNGER	PM901
253	X-3679-122-0	LEVER ASSY, TENSION REGULATOR		267	3-679-190-00	SPRING, TENSION	
254	3-679-156-00	SPRING, TENSION		268	X-3681-104-0	TABLE ASSY, S REEL	
255	Δ 3-679-230-00	LEVER, FUNCTION		269	Δ X-3679-130-0	CHASSIS ASSY, SUB	
256	3-679-151-00	SPRING, TENSION		270	1-554-374-00	SWITCH, LEVER	S901, S902
257	Δ 3-679-231-00	LEVER, BRAKE, SOFT		271	3-679-318-00	WASHER, PENDULUM ARM	
258	X-3679-117-0	BRAKE ASSY, S		272	A-6759-074-K	ARM BLOCK ASSY, PENDULUM	
259	Δ 3-681-163-00	HOOK, SPRING, REWIND		273	X-2622-201-0	ROTOR ASSY, R	
260	3-681-156-00	SPRING, TENSION		274	Δ A-4910-021-A	MOUNTED PCB, R STATOR	M903
261	Δ X-3681-105-0	ARM ASSY, REWIND BRAKE		275	Δ 1-610-401-00	PC BOARD, RD-6	
262	Δ 3-679-168-00	JOINT, BRAKE, L		276	Δ 1-610-402-00	PC BOARD, RD-7	
263	3-669-595-00	WASHER (2), STOPPER		277	3-646-573-00	WASHER	
264	X-3679-119-0	ARM ASSY, STOPPER, PENDULUM		278	3-646-572-00	BEARING	

5-7. CHASSIS ASSEMBLY (1)



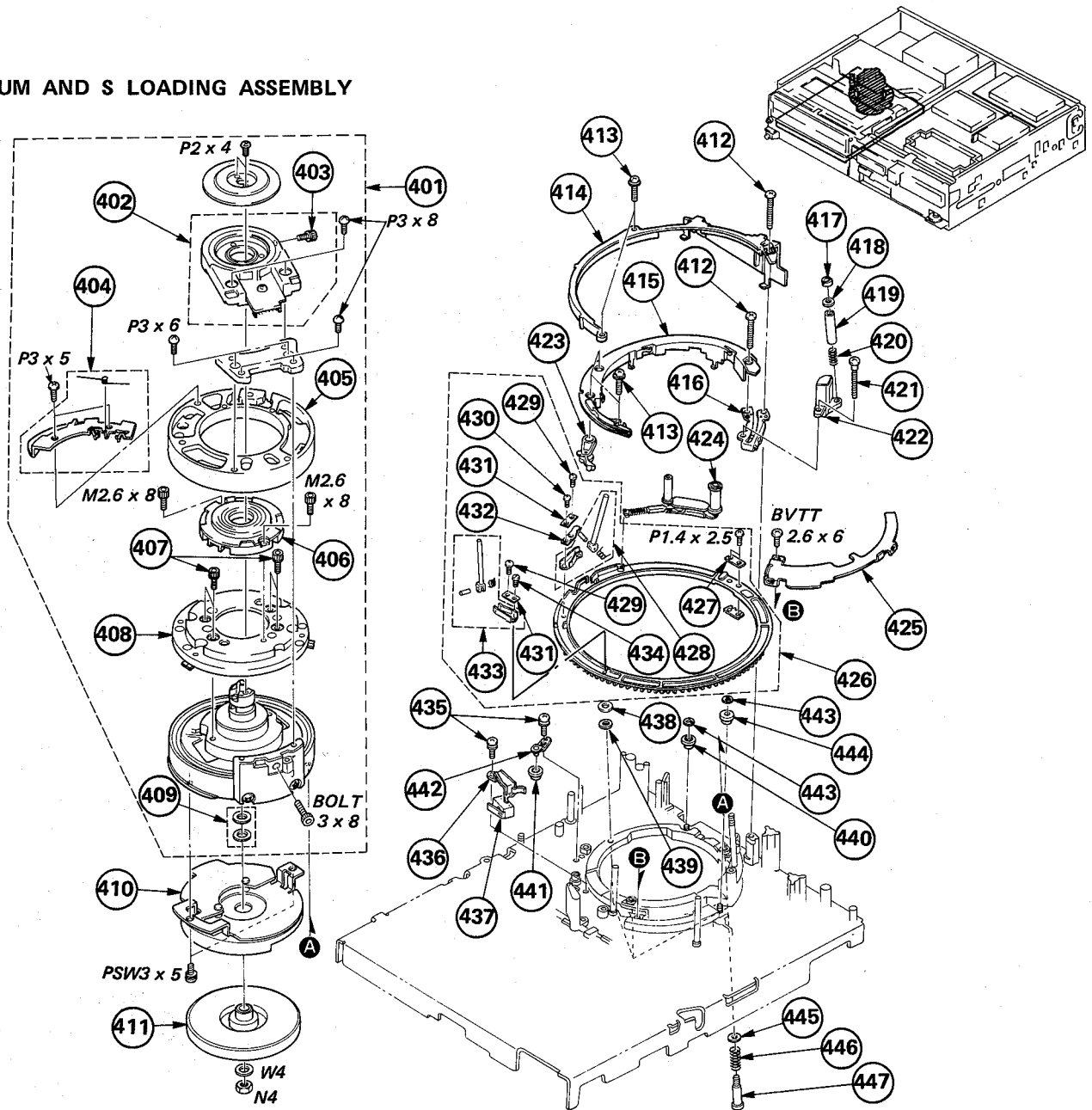
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
301	3-669-596-00	WASHER (2.3), STOPPER		320	3-669-465-00	WASHER (1.5), STOPPER	
302	Δ:X-3679-108-0	ARM ASSY, PRESS, PINCH		321	Δ:X-3679-145-0	ARM ASSY, CAR, TENSION	
303	3-669-480-11	+ PTPWH 2		322	Δ:3-679-117-00	CHASSIS, ARM, STOPPER	
304	Δ:3-672-540-00	PLATE, GROUND, TAPE GUIDE		323	Δ:1-454-365-21	SOLENOID, PLUNGER (PINCH)	PM902
305	Δ:3-669-618-00	PLATE (2), ADJUST		324	X-3679-152-0	ARM (B) ASSY, PINCH SOLENOID	
306	3-679-164-00	SPRING, TENSION		325	Δ:3-672-542-00	BRACKET, SWITCH, LE	
307	1-464-286-00	SENSOR, S COIL	L901	326	1-553-539-00	SWITCH, MICRO (LOADING END)	S903
308	3-669-476-04	PLATE, GUIDE		327	3-669-595-00	WASHER (2), STOPPER	
309	X-3679-149-0	ARM (B) ASSY, LOCK	310	328	Δ:X-3669-379-0	ARM (P) ASSY, PINCH LIMITER	329
310	3-679-323-00	SPRING, TENSION		329	3-515-170-00	SPRING, TENSION	
311	3-681-284-01	SCREW (-2.6X5) (S)		330	Δ:3-679-163-00	PLATE, LID OPEN	
312	3-679-359-00	SPRING, COMPRESSION		331	X-3681-106-0	LEVER ASSY, SLIDE	
313	3-669-633-00	SCREW, + PW2		332	3-681-154-00	SPRING, TORSION	
314	Δ:3-672-507-00	PLATE (3-1), ADJUSTMENT		333	X-3681-107-0	ARM ASSY, REVIEW BRAKE	336
315	1-464-250-00	SENSOR, T COIL	L902	334	8-838-048-01	MOTOR, DC (BHF-1908A)	M902
316	3-508-108-XX	SPRING, TENSION		335	3-669-607-00	+PSW (SMALL ROUND) 2.6	
317	Δ:3-679-251-00	LIMITER, STOPPER		336	3-701-436-11	WASHER, 1.6	
318	Δ:X-3679-123-0	ARM ASSY, STOPPER		337	3-681-231-00	SCREW (+PW 2.6X8), TAPPING	
319	3-679-307-00	GEAR, TENSION					

5-8. CHASSIS ASSEMBLY (2)



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
351	A-6761-060-A	ACE ASSY	352,353,354,390	372	▲:3-679-165-00	STOPPER, SLIDER	
352	3-669-480-11	+ PTPWH 2		373	3-679-119-00	BELT, SYNCHRO	
353	▲:3-669-316-00	SPRING, COMPRESSION		374	3-679-140-00	FLANGE, GEAR, INTERNAL	
354	3-669-598-00	WASHER, CTL		375	3-679-101-00	GEAR, INTERNAL	
355	3-669-318-00	NUT, ADJUSTMENT, GUIDE		376	3-679-104-05	GEAR	
356	3-669-317-00	SPRING, COMPRESSION		377	3-679-115-00	GEAR (LARGE), LOADING	
357	3-669-465-00	WASHER (1.5), STOPPER		378	X-3679-111-0	CARRIER ASSY	
358	X-3679-147-0	CHASSIS (B) ASSY, DRIVE GEAR		379	▲:X-3679-112-0	CHASSIS ASSY, GEAR, PLANET	
359	X-3679-148-0	GEAR (F) ASSY (B)		380	3-679-114-00	GEAR (SMALL), LOADING	
360	3-669-596-00	WASHER (2.3), STOPPER		381	X-3669-321-0	GEAR (C) ASSY	
361	X-3679-264-1	ARM ASSY, PINCH ROLLER		382	X-3679-268-1	MOTOR ASSY, L	M904
362	3-669-431-00	FLANGE (UPPER), GUIDE		383	▲:1-605-071-00	PC BOARD, LM-8	
363	3-669-438-11	ROLLER (#9), GUIDE		384	▲:3-669-613-00	INSULATOR, L MOTOR	
364	3-669-443-00	BEARING, BALL (NO FLANGE)		385	3-669-595-00	WASHER (2), STOPPER	
365	3-669-337-00	GEAR (D)		387	3-657-841-31	SPACER (2X2.5)	
366	3-669-338-00	GEAR (E)		388	3-701-439-11	WASHER	
367	3-683-441-01	SPRING		389	▲:X-3679-265-1	SLIDER ASSY (2), T	
368	3-669-432-00	FLANGE (LOWER), GUIDE		390	3-679-362-00	SCREW (M2X4), PAN	
369	3-669-452-00	SPRING, COMPRESSION		391	3-683-454-01	WASHER, POLYETHYLENE	
370	3-549-014-00	SPRING, TENSION					
371	3-669-607-31	+PSW (SMALL ROUND) (2.6)					

5-9. DRUM AND S LOADING ASSEMBLY



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
401	A-6050-233-A	DRUM ASSY (DSH-48A-R)	402,404-409	425	3-669-477-00	LINER, LINK, PIN	
402	A-6050-237-A	GUIDE ARM ASSY	403	426	X-3679-150-0	RING (YA) ASSY, S LOADING	427-434
403	3-681-360-01	BOLT, HEX, SOCKET (WASHER) 2.6x8		427	3-669-616-00	RETAINER	
404	A-6760-066-B	SPRING ASSY, TAPE RETAINER		428	X-3669-430-0	HOLDER BLOCK ASSY, #3 GUIDE	
405	A-6760-178-A	DRUM ASSY, UPPER		429	3-669-478-00	SCREW (1X3), TAPPING	
406	X-3681-312-1	ROTARY COUPLER ASSY		430	3-669-479-11	SCREW (1.4X3.5), TAPPING	
407	3-669-157-00	BOLT (WASHER) (2.6x8)		431	3-669-472-02	RETAINER, SPRING, LEAF	
408	A-6762-165-A	DISK ASSY (DSR-48-R)		432	3-672-583-00	SPRING	
409	X-3669-105-0	SPACER BLOCK ASSY		433	X-3669-429-0	HOLDER BLOCK ASSY, #2 GUIDE	
410	X-2621-204-0	STATOR ASSY, D		434	3-672-586-00	SCREW (1.4X3), TAPPING	
411	X-2621-202-0	ROTOR ASSY, D		435	3-669-607-31	+PSW (SMALL ROUND) (2.6)	
412	3-669-466-21	SCREW (M 2.6)		436	3-669-355-00	HOLDER, SWITCH, ULE	
413	3-669-480-11	+ PTPWH 2		437	1-553-718-00	SWITCH, MICRO (UNLOADING END)	S904
414	3-669-585-00	GUIDE (2), SHUTTLE		438	3-669-646-00	SPACER, DRUM	
415	3-679-290-00	GUIDE (1-YA), SHUTTLE		439	3-669-646-11	SPACER, DRUM	
416	X-3679-263-1	BASE ASSY, SLANT		440	3-669-630-00	ROLLER (C), RING	
417	3-669-446-00	NUT, GUIDE, NO. 6		441	3-669-360-00	ROLLER, RING	
418	3-679-910-00	FLANGE (S), GUIDE, NUMBER 6		442	X-3669-329-0	PLATE ASSY, ADJUSTMENT	
419	3-669-445-00	SPACER, GUIDE, NO. 6		443	3-669-465-00	WASHER (1.5), STOPPER	
420	3-669-615-00	SPRING, COMPRESSION		444	3-669-597-00	ROLLER (B), RING	
421	3-669-606-00	SCREW (2.6)		445	3-669-600-11	WASHER, FLAT (3.5)	
422	8-825-508-10	HEAD, FE (FULL ERASE)		446	3-429-123-00	SPRING	
423	X-3669-327-0	ARM ASSY, SWITCH, ULE		447	3-669-302-00	SCREW, FITTING	
424	A-6750-158-A	SHUTTLE (2) BLOCK ASSY					

5-10. HARDWARE LIST

SCREW

7-621-259-32 SCREW +P 2.6X5
7-621-259-35 SCREW +P 2.6X5
7-621-759-35 +PSW, 2.6X5
7-621-759-45 +PSW, 2.6X6
7-627-551-08 SCREW, PRECISION +P 1.4X1.6

7-627-551-28 SCREW, PRECISION +P 1.4X2.5
7-627-552-38 SCREW, PRECISION +P 1.7X3
7-628-253-05 SCREW +PS 2X4
7-628-253-45 SCREW +PS 2X10
7-628-253-95 SCREW +PS 2.6X4

7-628-254-15 SCREW +PS 2.6X6
7-685-134-11 SCREW +P 2.6X8 TYPE2 NON-SLIT
7-685-134-21 SCREW +P 2.6X8 TYPE2 SLIT
7-685-135-11 SCREW +P 2.6X10 TYPE2 NON-SLIT
7-685-534-11 SCREW +BTP 2.6X8 TYPE2 N-S

7-685-791-01 SCREW +PTT 2.6X5 (S)
7-685-861-09 SCREW +BVTT 2.6X5 (S)
7-685-862-01 SCREW +BVTT 2.6X6 (S)
7-685-871-01 SCREW +BVTT 3X6 (S)

SET-SCREW

7-621-712-26 SET-SCREW, SLOT 2.6X3FLAT POINT
7-621-712-35 SET-SCREW, SLOT 2.6X4CONE POINT
7-621-712-46 SET-SCREW, SLOT 2.6X5FLAT POINT

NUT

7-622-205-05 N 2, TYPE 2

RING

7-624-118-01 RING, RETAINING E-2.5
7-624-190-61 STOP RING 2.4, TYPE-CS

SPRING PIN

7-626-302-31 SPRING PIN, 2.5X14

FILM

7-632-658-01 FILM

TAPPING

7-685-105-11 TPG +P 2X8, TYPE 2, NON-SLIT

WASHER

7-688-002-11 W 2.6, MIDDLE
7-688-004-01 W 4, SMALL

R STATOR**PT-7****YC-28****SECTION 6
ELECTRICAL PARTS LIST****NOTE:**

The components identified by shading and mark **▲** are critical for safety. Replace only with part number specified.

• =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

• Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS
• MF : μ F, PF : μ μ F

RESISTORS
• All resistors are in ohms
• F : nonflammable

COILS
• MMH : mH, UH : μ H

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
▲:A-4910-021-B		R STATOR (REEL MOTOR) BOARD, COMPLETE *****		▲:A-6023-241-A		PT-7 BOARD, COMPLETE *****	
▲:1-560-460-00		PIN, CONNECTOR 4P		▲:3-684-037-01		HEAT SINK, PT	
		CAPACITOR		7-621-770-87		SCREW +B 2.6X5	
C1	1-123-821-00	ELECT 47MF 20% 16V				CAPACITOR	
C2	1-123-821-00	ELECT 47MF 20% 16V		C001	1-123-356-00	ELECT 10MF 20% 16V	
C3	1-123-821-00	ELECT 47MF 20% 16V		C002	1-123-356-00	ELECT 10MF 20% 16V	
C4	1-123-821-00	ELECT 47MF 20% 16V		C003	1-101-006-00	CERAMIC 0.047MF 50V	
		DIODE		C004	1-123-380-00	ELECT 1MF 20% 50V	
D1	8-719-941-48	DIODE 1N4148TP		C005	1-101-888-00	CERAMIC 68PF 5% 50V	
		IC		C006	1-101-888-00	CERAMIC 68PF 5% 50V	
IC1	8-759-108-77	IC CX877		C007	1-123-308-00	ELECT 220MF 20% 10V	
		TRANSISTOR		C008	1-123-308-00	ELECT 220MF 20% 10V	
Q1	8-729-100-01	TRANSISTOR 2SD992		C009	1-123-322-00	ELECT 330MF 20% 16V	
Q2	8-729-100-01	TRANSISTOR 2SD992		C010	1-123-839-00	ELECT 1000MF 20% 16V	
Q3	8-729-100-01	TRANSISTOR 2SD992				CONNECTOR	
Q4	8-729-100-01	TRANSISTOR 2SD992		CN002▲:1-560-891-00		PIN, CONNECTOR 3P	
Q5	8-729-100-01	TRANSISTOR 2SD992		CN003▲:1-560-891-00		PIN, CONNECTOR 3P	
Q6	8-729-100-01	TRANSISTOR 2SD992		CN004▲:1-560-894-00		PIN, CONNECTOR 6P	
		RESISTOR				DIODE	
R1	1-247-823-00	CARBON 470 5% 1/6W		D001	8-719-911-19	DIODE 1SS119	
R2	1-247-823-00	CARBON 470 5% 1/6W				IC	
R3	1-247-823-00	CARBON 470 5% 1/6W		IC001	8-759-745-56	IC NJM4556D	
R4	1-247-829-00	CARBON 820 5% 1/6W				TRANSISTOR	
R5	1-247-871-00	CARBON 47K 5% 1/6W		Q001	8-729-316-16	TRANSISTOR 2SC1061	
R6	1-247-871-00	CARBON 47K 5% 1/6W		Q002	8-729-316-16	TRANSISTOR 2SC1061	
R7	1-247-871-00	CARBON 47K 5% 1/6W		Q003	8-729-178-54	TRANSISTOR 2SC2785	
R8	1-247-871-00	CARBON 47K 5% 1/6W				RESISTOR	
		DIODE		R001	1-247-866-00	CARBON 30K 5% 1/6W	
S1	8-719-810-31	DIODE THS103-1		R002	1-247-866-00	CARBON 30K 5% 1/6W	
S2	8-719-810-31	DIODE THS103-1		R003	1-247-866-00	CARBON 30K 5% 1/6W	
				R004	1-247-866-00	CARBON 30K 5% 1/6W	
				R005	1-247-871-00	CARBON 47K 5% 1/6W	
				R006	1-247-871-00	CARBON 47K 5% 1/6W	
				R007	1-247-831-00	CARBON 1K 5% 1/6W	
				R008	1-247-831-00	CARBON 1K 5% 1/6W	
				R009	1-247-801-00	CARBON 56 5% 1/6W	
				R010	1-247-801-00	CARBON 56 5% 1/6W	
				R011	1-247-831-00	CARBON 1K 5% 1/6W	

				▲:A-6711-527-A		YC-28 BOARD, COMPLETE *****	
				1-536-796-21		TERMINAL BOARD, CONTROL PANEL	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
FILTER BAND PASS							
BPF001	1-235-098-00	FILTER, BAND PASS		C051	1-102-525-00	CERAMIC 68PF	5% 50V
CAPACITOR				C052	1-102-525-00	CERAMIC 68PF	5% 50V
C001	1-123-356-00	ELECT 10MF	20% 16V	C053	1-123-380-00	ELECT 1MF	20% 50V
C002	1-123-356-00	ELECT 10MF	20% 16V	C054	1-161-002-00	CERAMIC 0.0012MF	10% 25V
C003	1-123-356-00	ELECT 10MF	20% 16V	C055	1-123-380-00	ELECT 1MF	20% 50V
C004	1-123-356-00	ELECT 10MF	20% 16V	C056	1-102-962-00	CERAMIC 30PF	5% 50V
C005	1-123-356-00	ELECT 10MF	20% 16V	C057	1-102-981-00	CERAMIC 300PF	5% 50V
C006	1-123-356-00	ELECT 10MF	20% 16V	C058	1-123-306-00	ELECT 47MF	20% 10V
C007	1-101-004-00	CERAMIC 0.01MF	50V	C059	1-101-004-00	CERAMIC 0.01MF	50V
C008	1-123-332-00	ELECT 47MF	20% 16V	C060	1-108-579-00	MYLAR 0.01MF	5% 50V
C009	1-123-311-00	ELECT 1000MF	20% 10V	C061	1-123-354-00	ELECT 3.3MF	20% 50V
C010	1-123-356-00	ELECT 10MF	20% 16V	C062	1-123-306-00	ELECT 47MF	20% 10V
C011	1-123-356-00	ELECT 10MF	20% 25V	C063	1-101-004-00	CERAMIC 0.01MF	50V
C013	1-123-306-00	ELECT 47MF	20% 10V	C064	1-102-521-00	CERAMIC 43PF	5% 50V
C014	1-123-381-00	ELECT 2.2MF	20% 50V	C065	1-102-852-00	CERAMIC 47PF	5% 50V
C015	1-123-306-00	ELECT 47MF	20% 10V	C066	1-102-852-00	CERAMIC 47PF	5% 50V
C016	1-108-589-00	MYLAR 0.027MF	5% 50V	C067	1-161-772-00	CERAMIC 0.1MF	25V
C017	1-101-004-00	CERAMIC 0.01MF	50V	C068	1-101-004-00	CERAMIC 0.01MF	50V
C018	1-123-306-00	ELECT 47MF	20% 10V	C069	1-102-962-00	CERAMIC 30PF	5% 50V
C019	1-101-004-00	CERAMIC 0.01MF	50V	C070	1-101-004-00	CERAMIC 0.01MF	50V
C020	1-101-004-00	CERAMIC 0.01MF	50V	C071	1-123-380-00	ELECT 1MF	20% 50V
C021	1-101-004-00	CERAMIC 0.01MF	50V	C072	1-101-004-00	CERAMIC 0.01MF	50V
C022	1-101-004-00	CERAMIC 0.01MF	50V	C073	1-102-525-00	CERAMIC 68PF	5% 50V
C023	1-101-882-00	CERAMIC 51PF	5% 50V	C074	1-102-525-00	CERAMIC 68PF	5% 50V
C024	1-130-047-00	FILM 180PF	5% 50V	C075	1-101-004-00	CERAMIC 0.01MF	50V
C025	1-108-555-00	MYLAR 0.001MF	5% 50V	C076	1-102-951-00	CERAMIC 15PF	5% 50V
C026	1-101-059-00	CERAMIC 510PF	5% 50V	C077	1-123-356-00	ELECT 10MF	20% 16V
C027	1-161-007-00	CERAMIC 0.0033MF	10% 25V	C078	1-123-356-00	ELECT 10MF	20% 16V
C028	1-108-555-00	MYLAR 0.001MF	5% 50V	C080	1-101-004-00	CERAMIC 0.01MF	50V
C029	1-123-354-00	ELECT 3.3MF	20% 50V	C082	1-161-024-00	CERAMIC 0.082MF	10% 25V
C031	1-101-004-00	CERAMIC 0.01MF	50V	C083	1-102-977-00	CERAMIC 200PF	5% 50V
C032	1-102-816-00	CERAMIC 120PF	5% 50V	C084	1-123-328-00	ELECT 4.7MF	20% 25V
C033	1-101-004-00	CERAMIC 0.01MF	50V	C085	1-101-004-00	CERAMIC 0.01MF	50V
C034	1-101-004-00	CERAMIC 0.01MF	50V	C086	1-108-557-00	MYLAR 0.0012MF	5% 50V
C035	1-102-816-00	CERAMIC 120PF	5% 50V	C087	1-161-019-00	CERAMIC 0.033MF	10% 25V
C036	1-101-882-00	CERAMIC 51PF	5% 50V	C088	1-101-361-00	CERAMIC 150PF	5% 50V
C037	1-101-004-00	CERAMIC 0.01MF	50V	C092	1-101-004-00	CERAMIC 0.01MF	50V
C038	1-101-004-00	CERAMIC 0.01MF	50V	C093	1-101-006-00	CERAMIC 0.047MF	50V
C039	1-101-004-00	CERAMIC 0.01MF	50V	C095	1-102-976-00	CERAMIC 180PF	5% 50V
C040	1-101-004-00	CERAMIC 0.01MF	50V	C096	1-102-824-00	CERAMIC 470PF	5% 50V
C041	1-161-005-00	CERAMIC 0.0022MF	10% 25V	C097	1-102-823-00	CERAMIC 43PF	5% 50V
C042	1-102-516-00	CERAMIC 27PF	5% 50V	C098	1-102-820-00	CERAMIC 330PF	5% 50V
C043	1-101-004-00	CERAMIC 0.01MF	50V	C099	1-102-851-00	CERAMIC 15PF	5% 50V
C044	1-101-004-00	CERAMIC 0.01MF	50V	C100	1-161-025-00	CERAMIC 0.1MF	10% 25V
C045	1-102-523-00	CERAMIC 56PF	5% 50V	C101	1-108-595-00	MYLAR 0.047MF	5% 50V
C046	1-101-004-00	CERAMIC 0.01MF	50V	C102	1-161-005-00	CERAMIC 0.0022MF	10% 25V
C047	1-101-004-00	CERAMIC 0.01MF	50V	C103	1-108-555-00	MYLAR 0.001MF	5% 50V
C048	1-101-004-00	CERAMIC 0.01MF	50V	C104	1-102-977-00	CERAMIC 200PF	5% 50V
C049	1-101-004-00	CERAMIC 0.01MF	50V	C105	1-102-973-00	CERAMIC 100PF	5% 50V
C050	1-102-865-00	CERAMIC 8PF	0.5PF 50V	C106	1-123-356-00	ELECT 10MF	20% 16V
				C107	1-161-025-00	CERAMIC 0.1MF	10% 25V
				C108	1-101-004-00	CERAMIC 0.01MF	50V
				C109	1-101-004-00	CERAMIC 0.01MF	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark	Ref.No	Part No.	Description		Remark
C110	1-123-306-00	ELECT	47MF	20%	10V	C190	1-123-311-00	ELECT	1000MF 20% 10V
C111	1-101-882-00	CERAMIC	51PF	5%	50V	C191	1-101-004-00	CERAMIC	0.01MF 50V
C112	1-101-004-00	CERAMIC	0.01MF		50V	C192	1-123-328-00	ELECT	4.7MF 20% 25V
C113	1-101-006-00	CERAMIC	0.047MF		50V	C196	1-123-380-00	ELECT	1MF 20% 50V
C114	1-101-880-00	CERAMIC	47PF	5%	50V	C197	1-123-356-00	ELECT	10MF 20% 16V
C116	1-101-004-00	CERAMIC	0.01MF		50V	C198	1-102-980-00	CERAMIC	270PF 5% 50V
C117	1-101-361-00	CERAMIC	150PF		50V	C200	1-101-004-00	CERAMIC	0.01MF 50V
C118	1-101-004-00	CERAMIC	0.01MF		50V	C201	1-123-356-00	ELECT	10MF 20% 16V
C119	1-123-306-00	ELECT	47MF	20%	10V	C202	1-101-004-00	CERAMIC	0.01MF 50V
C120	1-101-004-00	CERAMIC	0.01MF		50V	C203	1-101-004-00	CERAMIC	0.01MF 50V
C121	1-101-004-00	CERAMIC	0.01MF		50V	C204	1-123-328-00	ELECT	4.7MF 20% 25V
C122	1-101-004-00	CERAMIC	0.01MF		50V	C206	1-101-004-00	CERAMIC	0.01MF 50V
C123	1-101-004-00	CERAMIC	0.01MF		50V	C207	1-161-025-00	CERAMIC	0.1MF 10% 25V
C124	1-102-948-00	CERAMIC	11PF	5%	50V	C208	1-123-356-00	ELECT	10MF 20% 16V
C125	1-123-330-00	ELECT	22MF	20%	16V	C211	1-123-356-00	ELECT	10MF 20% 16V
C127	1-123-318-00	ELECT	33MF	20%	16V	C212	1-123-333-00	ELECT	100MF 20% 16V
C128	1-123-330-00	ELECT	22MF	20%	16V	C214	1-123-356-00	ELECT	10MF 20% 16V
C129	1-123-330-00	ELECT	22MF	20%	16V	C215	1-123-330-00	ELECT	22MF 20% 16V
C130	1-123-356-00	ELECT	10MF	20%	16V	C217	1-161-025-00	CERAMIC	0.1MF 10% 25V
C131	1-123-380-00	ELECT	1MF	20%	50V	C230	1-124-475-11	ELECT	470MF 20% 16V
C132	1-123-328-00	ELECT	4.7MF	20%	25V	C241	1-161-772-00	CERAMIC	0.1MF 10% 25V
C133	1-102-851-00	CERAMIC	15PF	5%	50V	C243	1-161-772-00	CERAMIC	0.1MF 10% 25V
C134	1-102-821-00	CERAMIC	360PF	5%	50V	C244	1-101-006-00	CERAMIC	0.047MF 50V
C135	1-102-823-00	CERAMIC	43PF	5%	50V	C245	1-101-006-00	CERAMIC	0.047MF 50V
C136	1-102-976-00	CERAMIC	180PF	5%	50V	C246	1-161-772-00	CERAMIC	0.1MF 10% 25V
C137	1-102-513-00	CERAMIC	18PF	5%	50V	C247	1-123-320-00	ELECT	100MF 20% 16V
C138	1-102-529-00	CERAMIC	100PF	5%	50V	C401	1-123-381-00	ELECT	2.2MF 20% 50V
C139	1-102-529-00	CERAMIC	100PF	5%	50V	C402	1-101-001-00	CERAMIC	0.001MF 50V
C140	1-102-519-00	CERAMIC	36PF	5%	50V	C403	1-101-001-00	CERAMIC	0.001MF 50V
C141	1-102-529-00	CERAMIC	100PF	5%	50V	C404	1-101-004-00	CERAMIC	0.01MF 50V
C142	1-123-328-00	ELECT	4.7MF	20%	25V	C405	1-123-330-00	ELECT	22MF 20% 16V
C144	1-102-511-00	CERAMIC	13PF	5%	50V	C406	1-123-330-00	ELECT	22MF 20% 16V
C145	1-102-522-00	CERAMIC	51PF	5%	50V	C407	1-102-962-00	CERAMIC	30PF 5% 50V
C146	1-102-522-00	CERAMIC	51PF	5%	50V	C408	1-101-888-00	CERAMIC	68PF 5% 50V
C147	1-102-511-00	CERAMIC	13PF	5%	50V	C409	1-123-381-00	ELECT	2.2MF 20% 50V
C148	1-101-006-00	CERAMIC	0.047MF		50V	C410	1-102-936-00	CERAMIC	3PF 0.25PF 50V
C155	1-101-004-00	CERAMIC	0.01MF		50V	C411	1-101-005-00	CERAMIC	0.022MF 50V
C156	1-101-004-00	CERAMIC	0.01MF		50V	C412	1-123-318-00	ELECT	33MF 20% 16V
C157	1-102-981-00	CERAMIC	300PF	5%	50V	C414	1-123-318-00	ELECT	33MF 20% 16V
C158	1-102-948-00	CERAMIC	11PF	5%	50V	C415	1-123-356-00	ELECT	10MF 20% 16V
C159	1-102-822-00	CERAMIC	390PF	5%	50V	C416	1-102-948-00	CERAMIC	11PF 5% 50V
C178	1-123-330-00	ELECT	22MF	20%	16V	C417	1-102-948-00	CERAMIC	11PF 5% 50V
C179	1-123-356-00	ELECT	10MF	20%	16V	C418	1-102-965-00	CERAMIC	39PF 5% 50V
C180	1-123-332-00	ELECT	47MF	20%	16V	C419	1-123-356-00	ELECT	10MF 20% 16V
C181	1-108-569-00	MYLAR	0.0039MF	5%	50V	C420	1-123-328-00	ELECT	4.7MF 20% 25V
C182	1-123-356-00	ELECT	10MF	20%	16V	C421	1-101-006-00	CERAMIC	0.047MF 50V
C183	1-101-006-00	CERAMIC	0.047MF		50V	C501	1-101-004-00	CERAMIC	0.01MF 50V
C184	1-123-332-00	ELECT	47MF	20%	16V	C502	1-101-004-00	CERAMIC	0.01MF 50V
C185	1-123-333-00	ELECT	100MF	20%	16V	C503	1-101-004-00	CERAMIC	0.01MF 50V
C186	1-101-004-00	CERAMIC	0.01MF		50V	C504	1-101-005-00	CERAMIC	0.022MF 50V
C187	1-123-330-00	ELECT	22MF	20%	16V	C505	1-102-822-00	CERAMIC	390PF 5% 50V
C188	1-161-025-00	CERAMIC	0.1MF	10%	25V	C506	1-101-006-00	CERAMIC	0.047MF 50V
C189	1-123-356-00	ELECT	10MF	20%	16V	C507	1-123-318-00	ELECT	33MF 20% 16V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<u>FILTER</u>				<u>IC</u>			
CF001	1-527-998-00	FILTER, CERAMIC		IC001	8-759-909-20	IC BA634	
CF002	1-527-875-00	FILTER, CERAMIC		IC002	8-759-904-95	IC BA7007	
CF003	1-527-849-00	FILTER, CERAMIC		IC003	8-759-202-47	IC CX10023	
<u>CONNECTOR</u>				IC004	8-759-208-94	IC CX894	
CN001▲	1-564-035-11	PIN, CONNECTOR 10P		IC005	8-752-006-10	IC CX20061	
CN003▲	1-560-891-00	PIN, CONNECTOR 3P		IC006	8-759-202-00	IC CX10021A-NP	
CN004▲	1-560-895-00	PIN, CONNECTOR 7P		IC009	8-759-101-62	IC CX20043	
CN005▲	1-560-893-00	PIN, CONNECTOR 5P		IC011	8-752-006-10	IC CX20061	
CN006▲	1-560-893-00	PIN, CONNECTOR 5P		IC012	8-759-979-26	IC CX7926	
CN007▲	1-560-898-00	PIN, CONNECTOR 10P		IC401	8-758-661-00	IC CX866A	
CN008▲	1-560-895-00	PIN, CONNECTOR 7P		<u>COIL</u>			
CN009	1-507-840-00	JACK, MINIATURE		L001	1-407-499-00	MICRO INDUCTOR 3.9MMH	
CN010	1-562-121-00	CONNECTOR, DIN 6P		L002	1-407-496-00	MICRO INDUCTOR 2.2MMH	
<u>TRIMMER</u>				L003	1-408-408-00	MICRO INDUCTOR 8.2UH	
CV001	1-141-275-00	CAP, TRIMMER		L004	1-408-406-00	MICRO INDUCTOR 5.6UH	
<u>DIODE</u>				L005	1-408-415-00	MICRO INDUCTOR 33UH	
D001 =>	8-719-911-19	DIODE 1SS119		L006	1-408-429-00	MICRO INDUCTOR 470UH	
D002 =>	8-719-911-19	DIODE 1SS119		L007	1-408-427-00	MICRO INDUCTOR 330UH	
D005 =>	8-719-911-19	DIODE 1SS119		L008	1-408-421-11	MICRO INDUCTOR 100UH	
D006	8-719-000-06	DIODE MC921		L010	1-408-427-00	MICRO INDUCTOR 330UH	
D009	8-719-000-06	DIODE MC921		L011	1-408-423-00	MICRO INDUCTOR 150UH	
D011 =>	8-719-911-19	DIODE 1SS119		L012	1-408-409-00	MICRO INDUCTOR 10UH	
D012 =>	8-719-911-19	DIODE 1SS119		L014	1-408-422-00	MICRO INDUCTOR 120UH	
D013 =>	8-719-911-19	DIODE 1SS119		L015	1-408-419-00	MICRO INDUCTOR 68UH	
D014 =>	8-719-911-19	DIODE 1SS119		L016	1-408-413-00	MICRO INDUCTOR 22UH	
D015 =>	8-719-911-19	DIODE 1SS119		L017	1-408-423-00	MICRO INDUCTOR 150UH	
D016	8-719-000-12	DIODE MC931		L018	1-408-419-00	MICRO INDUCTOR 68UH	
D017 =>	8-719-911-19	DIODE 1SS119		L019	1-408-416-00	MICRO INDUCTOR 39UH	
D018 =>	8-719-911-19	DIODE 1SS119		L020	1-408-416-00	MICRO INDUCTOR 39UH	
D019 =>	8-719-911-19	DIODE 1SS119		L021	1-408-422-00	MICRO INDUCTOR 120UH	
D020 =>	8-719-911-19	DIODE 1SS119		L022	1-408-424-00	MICRO INDUCTOR 180UH	
D021 =>	8-719-911-19	DIODE 1SS119		L023	1-408-422-00	MICRO INDUCTOR 120UH	
D022 =>	8-719-911-19	DIODE 1SS119		L026	1-408-419-00	MICRO INDUCTOR 68UH	
D023 =>	8-719-911-19	DIODE 1SS119		L401	1-408-397-00	MICRO INDUCTOR 1UH	
D025 =>	8-719-911-19	DIODE 1SS119		L402	1-408-397-00	MICRO INDUCTOR 1UH	
D027	8-719-000-06	DIODE MC921		L501	1-408-408-00	MICRO INDUCTOR 8.2UH	
D029	8-719-100-56	DIODE RD10-EB1		L502	1-408-423-00	MICRO INDUCTOR 150UH	
D030 =>	8-719-911-19	DIODE 1SS119		<u>FILTER LOW PASS</u>			
D031 =>	8-719-911-19	DIODE 1SS119		LPF001	1-235-097-00	FILTER, LOW PASS	
D033 =>	8-719-911-19	DIODE 1SS119		<u>VARIABLE COIL</u>			
D036 =>	8-719-911-19	DIODE 1SS119		LV001	1-407-291-00	MICRO INDUCTOR 15MMH	
<u>DELAY LINE</u>				LV002	1-407-573-00	COIL, VARIABLE 47UH	
DL001	1-415-313-00	DELAY LINE (1H)		LV003	1-407-571-00	COIL, VARIABLE 22UH	
DL401	1-415-352-11	DELAY LINE, 1H		LV501	1-407-569-00	COIL, VARIABLE 10UH	
DL501	1-415-282-00	DELAY LINE		<u>IC LINK</u>			
				PS001A	1-532-685-11	LINK, IC (N-20 0.8A)	

NOTE:

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
TRANSISTOR							
Q001	8-729-900-36	TRANSISTOR DTC124ES		Q063	=>8-729-245-83	TRANSISTOR 2SC2458	
Q002	=>8-729-245-83	TRANSISTOR 2SC2458		Q064	=>8-729-245-83	TRANSISTOR 2SC2458	
Q003	8-729-600-12	TRANSISTOR 2SK108		Q065	=>8-729-245-83	TRANSISTOR 2SC2458	
Q004	=>8-729-245-83	TRANSISTOR 2SC2458		Q066	△ 8-729-117-54	TRANSISTOR 2SA1175	
Q005	8-729-600-12	TRANSISTOR 2SK108		Q067	=>8-729-245-83	TRANSISTOR 2SC2458	
Q007	=>8-729-245-83	TRANSISTOR 2SC2458		Q068	=>8-729-245-83	TRANSISTOR 2SC2458	
Q010	8-729-177-32	TRANSISTOR 2SD773		Q069	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q011	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q070	8-729-603-50	TRANSISTOR 2SC403SP	
Q014	8-729-113-33	TRANSISTOR 2SB733-4		Q071	=>8-729-245-83	TRANSISTOR 2SC2458	
Q015	=>8-729-245-83	TRANSISTOR 2SC2458		Q072	=>8-729-245-83	TRANSISTOR 2SC2458	
Q016	=>8-729-245-83	TRANSISTOR 2SC2458		Q074	=>8-729-245-83	TRANSISTOR 2SC2458	
Q019	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q075	8-729-900-85	TRANSISTOR DTC144WS	
Q020	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q100	8-729-900-85	TRANSISTOR DTC144WS	
Q021	=>8-729-245-83	TRANSISTOR 2SC2458		Q101	8-729-900-89	TRANSISTOR DTC144ES	
Q022	=>8-729-245-83	TRANSISTOR 2SC2458		Q102	8-729-900-65	TRANSISTOR DTA144ES	
Q023	=>8-729-245-83	TRANSISTOR 2SC2458		Q103	=>8-729-245-83	TRANSISTOR 2SC2458	
Q024	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q401	=>8-729-245-83	TRANSISTOR 2SC2458	
Q025	=>8-729-245-83	TRANSISTOR 2SC2458		Q501	=>8-729-245-83	TRANSISTOR 2SC2458	
Q026	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q502	=>8-729-245-83	TRANSISTOR 2SC2458	
Q027	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q503	=>8-729-245-83	TRANSISTOR 2SC2458	
Q028	=>8-729-245-83	TRANSISTOR 2SC2458		Q504	=>8-729-245-83	TRANSISTOR 2SC2458	
Q029	=>8-729-245-83	TRANSISTOR 2SC2458		RESISTOR			
Q030	=>8-729-245-83	TRANSISTOR 2SC2458		R001	1-247-838-00	CARBON 2K 5% 1/6W	
Q031	=>8-729-245-83	TRANSISTOR 2SC2458		R003	1-247-831-00	CARBON 1K 5% 1/6W	
Q032	=>8-729-245-83	TRANSISTOR 2SC2458		R005	1-247-827-00	CARBON 680 5% 1/6W	
Q033	=>8-729-245-83	TRANSISTOR 2SC2458		R006	1-247-879-00	CARBON 100K 5% 1/6W	
Q034	=>8-729-245-83	TRANSISTOR 2SC2458		R007	1-247-871-00	CARBON 47K 5% 1/6W	
Q035	8-729-603-50	TRANSISTOR 2SC403SP		R008	1-247-879-00	CARBON 100K 5% 1/6W	
Q036	8-729-603-50	TRANSISTOR 2SC403SP		R009	1-247-879-00	CARBON 100K 5% 1/6W	
Q037	8-729-384-46	TRANSISTOR 2SA844-C		R010	1-247-814-00	CARBON 200 5% 1/6W	
Q038	8-729-384-46	TRANSISTOR 2SA844-C		R011	1-247-871-00	CARBON 47K 5% 1/6W	
Q039	8-729-603-50	TRANSISTOR 2SC403SP		R012	1-247-827-00	CARBON 680 5% 1/6W	
Q040	8-729-603-50	TRANSISTOR 2SC403SP		R013	1-247-879-00	CARBON 100K 5% 1/6W	
Q041	8-729-384-46	TRANSISTOR 2SA844-C		R014	1-247-871-00	CARBON 47K 5% 1/6W	
Q042	8-729-603-50	TRANSISTOR 2SC403SP		R015	1-247-879-00	CARBON 100K 5% 1/6W	
Q043	8-729-603-50	TRANSISTOR 2SC403SP		R016	1-247-879-00	CARBON 100K 5% 1/6W	
Q044	8-729-603-50	TRANSISTOR 2SC403SP		R017	1-247-814-00	CARBON 200 5% 1/6W	
Q045	8-729-384-46	TRANSISTOR 2SA844-C		R018	1-247-871-00	CARBON 47K 5% 1/6W	
Q047	8-729-603-50	TRANSISTOR 2SC403SP		R022	1-247-847-00	CARBON 4.7K 5% 1/6W	
Q048	8-729-603-50	TRANSISTOR 2SC403SP		R026	1-247-867-00	CARBON 33K 5% 1/6W	
Q049	8-729-603-50	TRANSISTOR 2SC403SP		R027	1-247-867-00	CARBON 33K 5% 1/6W	
Q050	8-729-603-50	TRANSISTOR 2SC403SP		R028	1-247-877-00	CARBON 82K 5% 1/6W	
Q051	8-729-384-46	TRANSISTOR 2SA844-C		R029	1-247-855-00	CARBON 10K 5% 1/6W	
Q052	8-729-603-50	TRANSISTOR 2SC403SP		R030	1-247-867-00	CARBON 33K 5% 1/6W	
Q053	8-729-384-46	TRANSISTOR 2SA844-C		R031	△ 1-212-857-00	FUSIBLE 10 5% 1/4W F	
Q054	8-729-384-46	TRANSISTOR 2SA844-C		R032	1-247-831-00	CARBON 1K 5% 1/6W	
Q055	8-729-384-46	TRANSISTOR 2SA844-C		R035	1-247-859-00	CARBON 15K 5% 1/6W	
Q056	8-729-603-50	TRANSISTOR 2SC403SP		R037	1-247-869-00	CARBON 39K 5% 1/6W	
Q060	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R038	1-247-837-00	CARBON 1.8K 5% 1/6W	
Q061	=>8-729-245-83	TRANSISTOR 2SC2458		R039	△ 1-212-857-00	FUSIBLE 10 5% 1/4W F	
Q062	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R040	△ 1-212-849-00	FUSIBLE 4.7 5% 1/4W F	
				R041	1-247-838-00	CARBON 2K 5% 1/6W	

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R046	1-247-835-00	CARBON	1.5K 5% 1/6W	R104	1-247-839-00	CARBON	2.2K 5% 1/6W
R047	1-247-879-00	CARBON	100K 5% 1/6W	R105	1-247-829-00	CARBON	820 5% 1/6W
R048	1-247-831-00	CARBON	1K 5% 1/6W	R106	1-247-831-00	CARBON	1K 5% 1/6W
R049	1-247-863-00	CARBON	22K 5% 1/6W	R107	1-247-824-00	CARBON	510 5% 1/6W
R050	1-247-853-00	CARBON	8.2K 5% 1/6W	R108	1-247-829-00	CARBON	820 5% 1/6W
R051	1-247-821-00	CARBON	390 5% 1/6W	R109	1-247-867-00	CARBON	33K 5% 1/6W
R052	1-247-819-00	CARBON	330 5% 1/6W	R111	1-247-846-00	CARBON	4.3K 5% 1/6W
R053	1-247-843-00	CARBON	3.3K 5% 1/6W	R112	1-247-854-00	CARBON	9.1K 5% 1/6W
R054	1-247-847-00	CARBON	4.7K 5% 1/6W	R113	1-247-843-00	CARBON	3.3K 5% 1/6W
R055	1-247-849-00	CARBON	5.6K 5% 1/6W	R114	1-247-828-00	CARBON	750 5% 1/6W
R056	1-247-867-00	CARBON	33K 5% 1/6W	R115	1-247-879-00	CARBON	100K 5% 1/6W
R058	1-247-855-00	CARBON	10K 5% 1/6W	R116	1-247-853-00	CARBON	8.2K 5% 1/6W
R059	1-247-859-00	CARBON	15K 5% 1/6W	R117	1-247-845-00	CARBON	3.9K 5% 1/6W
R060	1-247-867-00	CARBON	33K 5% 1/6W	R118	1-247-867-00	CARBON	33K 5% 1/6W
R061	1-247-855-00	CARBON	10K 5% 1/6W	R119	1-247-855-00	CARBON	10K 5% 1/6W
R062	1-247-855-00	CARBON	10K 5% 1/6W	R120	1-247-831-00	CARBON	1K 5% 1/6W
R063	1-247-841-00	CARBON	2.7K 5% 1/6W	R121	1-247-831-00	CARBON	1K 5% 1/6W
R064	1-247-848-00	CARBON	5.1K 5% 1/6W	R122	1-247-839-00	CARBON	2.2K 5% 1/6W
R065	1-247-889-00	CARBON	270K 5% 1/6W	R123	1-247-841-00	CARBON	2.7K 5% 1/6W
R066	1-247-870-00	CARBON	43K 5% 1/6W	R124	1-247-819-00	CARBON	330 5% 1/6W
R067	1-247-862-00	CARBON	20K 5% 1/6W	R125	1-247-831-00	CARBON	1K 5% 1/6W
R068	1-247-838-00	CARBON	2K 5% 1/6W	R126	1-247-831-00	CARBON	1K 5% 1/6W
R069	1-247-831-00	CARBON	1K 5% 1/6W	R127	1-247-835-00	CARBON	1.5K 5% 1/6W
R070	1-247-831-00	CARBON	1K 5% 1/6W	R128	1-247-831-00	CARBON	1K 5% 1/6W
R071	1-247-855-00	CARBON	10K 5% 1/6W	R129	1-247-867-00	CARBON	33K 5% 1/6W
R072	1-247-841-00	CARBON	2.7K 5% 1/6W	R130	1-247-842-00	CARBON	3K 5% 1/6W
R073	1-247-831-00	CARBON	1K 5% 1/6W	R131	1-247-841-00	CARBON	2.7K 5% 1/6W
R074	1-247-831-00	CARBON	1K 5% 1/6W	R132	1-247-887-00	CARBON	220K 5% 1/6W
R075	1-247-815-00	CARBON	220 5% 1/6W	R133	1-247-807-00	CARBON	100 5% 1/6W
R076	1-247-855-00	CARBON	10K 5% 1/6W	R134	1-247-845-00	CARBON	3.9K 5% 1/6W
R077	1-247-855-00	CARBON	10K 5% 1/6W	R135	1-247-883-00	CARBON	150K 5% 1/6W
R078	1-247-867-00	CARBON	33K 5% 1/6W	R136	1-247-879-00	CARBON	100K 5% 1/6W
R079	1-247-855-00	CARBON	10K 5% 1/6W	R137	1-247-857-00	CARBON	12K 5% 1/6W
R080	1-247-853-00	CARBON	8.2K 5% 1/6W	R138	1-247-861-00	CARBON	18K 5% 1/6W
R081	1-247-843-00	CARBON	3.3K 5% 1/6W	R139	1-247-841-00	CARBON	2.7K 5% 1/6W
R082	1-247-871-00	CARBON	47K 5% 1/6W	R140	1-247-867-00	CARBON	33K 5% 1/6W
R083	1-247-825-00	CARBON	560 5% 1/6W	R141	1-247-831-00	CARBON	1K 5% 1/6W
R084	1-247-831-00	CARBON	1K 5% 1/6W	R142	1-247-842-00	CARBON	3K 5% 1/6W
R085	1-247-803-00	CARBON	68 5% 1/6W	R143	1-247-855-00	CARBON	10K 5% 1/6W
R086	1-247-825-00	CARBON	560 5% 1/6W	R144	1-247-824-00	CARBON	510 5% 1/6W
R087	1-247-825-00	CARBON	560 5% 1/6W	R145	1-247-838-00	CARBON	2K 5% 1/6W
R088	1-247-801-00	CARBON	56 5% 1/6W	R146	1-247-831-00	CARBON	1K 5% 1/6W
R091	1-247-824-00	CARBON	510 5% 1/6W	R147	1-247-855-00	CARBON	10K 5% 1/6W
R092	1-247-791-00	CARBON	22 5% 1/6W	R148	1-247-831-00	CARBON	1K 5% 1/6W
R093	1-247-809-00	CARBON	120 5% 1/6W	R149	1-247-819-00	CARBON	330 5% 1/6W
R094	1-247-869-00	CARBON	39K 5% 1/6W	R150	1-247-863-00	CARBON	22K 5% 1/6W
R095	1-247-872-00	CARBON	51K 5% 1/6W	R151	1-247-812-00	CARBON	160 5% 1/6W
R096	1-247-879-00	CARBON	100K 5% 1/6W	R152	1-247-829-00	CARBON	820 5% 1/6W
R097	1-247-882-00	CARBON	130K 5% 1/6W	R153	1-247-863-00	CARBON	22K 5% 1/6W
R098	1-247-890-00	CARBON	300K 5% 1/6W	R154	1-247-821-00	CARBON	390 5% 1/6W
R100	1-247-869-00	CARBON	39K 5% 1/6W	R155	1-247-839-00	CARBON	2.2K 5% 1/6W
R101	1-247-864-00	CARBON	24K 5% 1/6W	R156	1-247-839-00	CARBON	2.2K 5% 1/6W
R103	1-247-831-00	CARBON	1K 5% 1/6W	R157	1-247-837-00	CARBON	1.8K 5% 1/6W

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R158	1-247-817-00	CARBON	270 5% 1/6W	R215	1-247-831-00	CARBON	1K 5% 1/6W
R159	1-247-810-00	CARBON	130 5% 1/6W	R216	1-247-832-00	CARBON	1.1K 5% 1/6W
R160	1-247-832-00	CARBON	1.1K 5% 1/6W	R217	1-247-831-00	CARBON	1K 5% 1/6W
R161	1-247-855-00	CARBON	10K 5% 1/6W	R218	1-247-831-00	CARBON	1K 5% 1/6W
R162	1-247-835-00	CARBON	1.5K 5% 1/6W	R219	1-247-866-00	CARBON	30K 5% 1/6W
R163	1-247-842-00	CARBON	3K 5% 1/6W	R220	1-247-874-00	CARBON	62K 5% 1/6W
R164	1-247-830-00	CARBON	910 5% 1/6W	R221	1-247-849-00	CARBON	5.6K 5% 1/6W
R165	1-247-834-00	CARBON	1.3K 5% 1/6W	R222	1-247-837-00	CARBON	1.8K 5% 1/6W
R166	1-247-818-00	CARBON	300 5% 1/6W	R223	1-247-837-00	CARBON	1.8K 5% 1/6W
R167	1-247-849-00	CARBON	5.6K 5% 1/6W	R231	1-247-867-00	CARBON	33K 5% 1/6W
R168	1-247-836-00	CARBON	1.6K 5% 1/6W	R235	1-247-831-00	CARBON	1K 5% 1/6W
R169	1-247-840-00	CARBON	2.4K 5% 1/6W	R236	1-247-853-00	CARBON	8.2K 5% 1/6W
R170	1-247-804-00	CARBON	75 5% 1/6W	R238	1-247-858-00	CARBON	13K 5% 1/6W
R171	1-247-901-00	CARBON	820K 5% 1/6W	R239	1-247-855-00	CARBON	10K 5% 1/6W
R172	1-247-857-00	CARBON	12K 5% 1/6W	R240	1-247-839-00	CARBON	2.2K 5% 1/6W
R173	1-247-861-00	CARBON	18K 5% 1/6W	R241	1-247-804-00	CARBON	75 5% 1/6W
R174	1-247-839-00	CARBON	2.2K 5% 1/6W	R242	1-247-879-00	CARBON	100K 5% 1/6W
R175	1-247-831-00	CARBON	1K 5% 1/6W	R243	1-247-855-00	CARBON	10K 5% 1/6W
R176	1-247-839-00	CARBON	2.2K 5% 1/6W	R244	1-247-851-00	CARBON	6.8K 5% 1/6W
R178	1-247-839-00	CARBON	2.2K 5% 1/6W	R245	1-247-879-00	CARBON	100K 5% 1/6W
R179	1-247-843-00	CARBON	3.3K 5% 1/6W	R246	1-247-879-00	CARBON	100K 5% 1/6W
R180	1-247-835-00	CARBON	1.5K 5% 1/6W	R247	1-247-871-00	CARBON	47K 5% 1/6W
R181	1-247-835-00	CARBON	1.5K 5% 1/6W	R248	1-247-818-00	CARBON	300 5% 1/6W
R185	1-247-843-00	CARBON	3.3K 5% 1/6W	R249	1-247-811-00	CARBON	150 5% 1/6W
R186	1-247-830-00	CARBON	910 5% 1/6W	R250	1-247-808-00	CARBON	110 5% 1/6W
R187	1-247-831-00	CARBON	1K 5% 1/6W	R251	1-247-838-00	CARBON	2K 5% 1/6W
R188	1-247-839-00	CARBON	2.2K 5% 1/6W	R252	1-247-803-00	CARBON	68 5% 1/6W
R189	1-247-834-00	CARBON	1.3K 5% 1/6W	R253	1-247-831-00	CARBON	1K 5% 1/6W
R190	1-247-834-00	CARBON	1.3K 5% 1/6W	R254	1-247-855-00	CARBON	10K 5% 1/6W
R191	1-247-831-00	CARBON	1K 5% 1/6W	R255	1-247-858-00	CARBON	13K 5% 1/6W
R192	1-247-831-00	CARBON	1K 5% 1/6W	R256	1-247-843-00	CARBON	3.3K 5% 1/6W
R193	1-247-855-00	CARBON	10K 5% 1/6W	R257	1-247-835-00	CARBON	1.5K 5% 1/6W
R194	1-247-819-00	CARBON	330 5% 1/6W	R258	1-247-852-00	CARBON	7.5K 5% 1/6W
R195	1-247-812-00	CARBON	160 5% 1/6W	R259	1-247-831-00	CARBON	1K 5% 1/6W
R196	1-247-863-00	CARBON	22K 5% 1/6W	R260	1-247-841-00	CARBON	2.7K 5% 1/6W
R197	1-247-863-00	CARBON	22K 5% 1/6W	R261	1-247-863-00	CARBON	22K 5% 1/6W
R198	1-247-829-00	CARBON	820 5% 1/6W	R262	1-247-859-00	CARBON	15K 5% 1/6W
R199	1-247-821-00	CARBON	390 5% 1/6W	R274	1-247-883-00	CARBON	150K 5% 1/6W
R200	1-247-839-00	CARBON	2.2K 5% 1/6W	R275	1-247-871-00	CARBON	47K 5% 1/6W
R201	1-247-837-00	CARBON	1.8K 5% 1/6W	R276	1-247-849-00	CARBON	5.6K 5% 1/6W
R202	1-247-831-00	CARBON	1K 5% 1/6W	R277	1-247-855-00	CARBON	10K 5% 1/6W
R203	1-247-815-00	CARBON	220 5% 1/6W	R280	1-247-835-00	CARBON	1.5K 5% 1/6W
R204	1-247-811-00	CARBON	150 5% 1/6W	R281	1-247-890-00	CARBON	300K 5% 1/6W
R205	1-247-811-00	CARBON	150 5% 1/6W	R282	1-247-807-00	CARBON	100 5% 1/6W
R206	1-247-834-00	CARBON	1.3K 5% 1/6W	R283	1-247-838-00	CARBON	2K 5% 1/6W
R207	1-247-874-00	CARBON	62K 5% 1/6W	R284	1-247-877-00	CARBON	82K 5% 1/6W
R208	1-247-874-00	CARBON	62K 5% 1/6W	R286	1-247-848-00	CARBON	5.1K 5% 1/6W
R209	1-247-833-00	CARBON	1.2K 5% 1/6W	R287	1-247-831-00	CARBON	1K 5% 1/6W
R210	1-247-824-00	CARBON	510 5% 1/6W	R288	1-247-803-00	CARBON	68 5% 1/6W
R211	1-247-831-00	CARBON	1K 5% 1/6W	R291	1-247-863-00	CARBON	22K 5% 1/6W
R212	1-247-824-00	CARBON	510 5% 1/6W	R292	1-247-875-00	CARBON	68K 5% 1/6W
R213	1-247-829-00	CARBON	820 5% 1/6W	R293	1-247-819-00	CARBON	330 5% 1/6W
R214	1-247-831-00	CARBON	1K 5% 1/6W	R294	1-247-818-00	CARBON	300 5% 1/6W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark		
R515	1-247-839-00	CARBON	2.2K	5%	1/6W
R516	1-247-821-00	CARBON	390	5%	1/6W
R517	1-247-821-00	CARBON	390	5%	1/6W
R518	1-247-821-00	CARBON	390	5%	1/6W
R519	1-247-821-00	CARBON	390	5%	1/6W
R520	1-247-839-00	CARBON	2.2K	5%	1/6W
R521	1-247-821-00	CARBON	390	5%	1/6W
R522	1-247-839-00	CARBON	2.2K	5%	1/6W
R523	1-247-812-00	CARBON	160	5%	1/6W
<u>VARIABLE RESISTOR</u>					
RV001	1-228-989-00	RES, ADJ, METAL GLAZE	470		
RV002	1-228-748-00	RES, ADJ, CARBON	10K		
RV003	1-228-750-00	RES, ADJ, CARBON	47K		
RV004	1-228-989-00	RES, ADJ, METAL GLAZE	470		
RV005	1-228-750-00	RES, ADJ, CARBON	47K		
RV006	1-228-749-00	RES, ADJ, CARBON	22K		
RV007	1-228-748-00	RES, ADJ, CARBON	10K		
RV008	1-228-745-00	RES, ADJ, CARBON	1K		
RV009	1-228-996-00	RES, ADJ, METAL GLAZE	47K		
RV010	1-228-749-00	RES, ADJ, CARBON	22K		
RV012	1-228-750-00	RES, ADJ, CARBON	47K		
RV013	1-228-750-00	RES, ADJ, CARBON	47K		
RV014	1-228-748-00	RES, ADJ, CARBON	10K		
RV015	1-228-989-00	RES, ADJ, METAL GLAZE	470		
RV016	1-228-745-00	RES, ADJ, CARBON	1K		
RV017	1-228-753-00	RES, ADJ, CARBON	470K		
RV019	1-228-993-00	RES, ADJ, METAL GLAZE	4.7K		
RV020	1-228-745-00	RES, ADJ, CARBON	1K		
RV021	1-228-750-00	RES, ADJ, CARBON	47K		
RV401	1-228-994-00	RES, ADJ, METAL GLAZE	10K		
RV501	1-228-744-00	RES, ADJ, CARBON	470		
<u>COIL</u>					
T001	1-426-093-00	COIL, REC C BPT			
<u>CRYSTAL</u>					
X001	1-527-345-00	CRYSTAL, OSC			

♣:A-6711-528-A		RP-17 BOARD, COMPLETE	*****		
♣:3-684-081-01		CASE (A) (MAIN), SHIELD, RP			
♣:3-684-082-02		LID, UPPER, RP SHIELD CASE (A)			
♣:3-684-083-02		LID, BOTTOM, RP SHIELD CASE (A)			
♣:3-684-084-01		CASE (B) (MAIN), SHIELD, RP			
♣:3-684-085-01		LID, UPPER, RP SHIELD CASE (B)			
♣:3-684-086-01		LID, BOTTOM, RP SHIELD CASE (B)			
<u>CAPACITOR</u>					
C003	1-101-004-00	CERAMIC	0.01MF		50V

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C004	1-123-356-00	ELECT	10MF	C106	1-102-977-00	CERAMIC	200PF
C005	1-123-379-00	ELECT	0.47MF	C107	1-123-356-00	ELECT	10MF
C006	1-101-004-00	CERAMIC	0.01MF	C108	1-101-004-00	CERAMIC	0.01MF
C007	1-123-356-00	ELECT	10MF	C109	1-161-025-00	CERAMIC	0.1MF
C008	1-101-004-00	CERAMIC	0.01MF	C110	1-101-004-00	CERAMIC	0.01MF
C012	1-101-004-00	CERAMIC	0.01MF	C111	1-101-004-00	CERAMIC	0.01MF
C013	1-102-820-00	CERAMIC	330PF	C112	1-161-025-00	CERAMIC	0.1MF
C014	1-123-356-00	ELECT	10MF	C113	1-161-025-00	CERAMIC	0.1MF
C017	1-102-973-00	CERAMIC	100PF	C114	1-102-978-00	CERAMIC	220PF
C018	1-102-973-00	CERAMIC	100PF	C115	1-101-004-00	CERAMIC	0.01MF
C019	1-102-824-00	CERAMIC	470PF	C116	1-161-025-00	CERAMIC	0.1MF
C020	1-101-004-00	CERAMIC	0.01MF	C117	1-161-025-00	CERAMIC	0.1MF
C021	1-101-880-00	CERAMIC	47PF	C118	1-123-380-00	ELECT	1MF
C022	1-101-880-00	CERAMIC	47PF	C119	1-101-004-00	CERAMIC	0.01MF
C023	1-123-333-00	ELECT	100MF	C120	1-123-380-00	ELECT	1MF
C024	1-123-356-00	ELECT	10MF	C121	1-102-531-00	CERAMIC	150PF
C025	1-101-004-00	CERAMIC	0.01MF	C122	1-161-025-00	CERAMIC	0.1MF
C026	1-123-379-00	ELECT	0.47MF	C123	1-123-318-00	ELECT	33MF
C027	1-123-356-00	ELECT	10MF	C124	1-101-004-00	CERAMIC	0.01MF
C028	1-101-004-00	CERAMIC	0.01MF	C125	1-101-004-00	CERAMIC	0.01MF
C029	1-102-521-00	CERAMIC	43PF	C126	1-161-025-00	CERAMIC	0.1MF
C030	1-101-004-00	CERAMIC	0.01MF	C127	1-123-318-00	ELECT	33MF
C033	1-102-977-00	CERAMIC	200PF	C128	1-101-004-00	CERAMIC	0.01MF
C034	1-123-332-00	ELECT	47MF	C129	1-101-004-00	CERAMIC	0.01MF
C035	1-101-004-00	CERAMIC	0.01MF	C130	1-161-025-00	CERAMIC	0.1MF
C036	1-123-356-00	ELECT	10MF	C201	1-123-356-00	ELECT	10MF
C037	1-101-004-00	CERAMIC	0.01MF	C202	1-123-356-00	ELECT	10MF
C038	1-101-006-00	CERAMIC	0.047MF	C203	1-123-356-00	ELECT	10MF
C039	1-101-006-00	CERAMIC	0.047MF	C204	1-123-356-00	ELECT	10MF
C040	1-101-004-00	CERAMIC	0.01MF	C205	1-123-356-00	ELECT	10MF
C041	1-102-960-00	CERAMIC	24PF	C206	1-123-380-00	ELECT	1MF
C042	1-102-960-00	CERAMIC	24PF	C207	1-123-318-00	ELECT	33MF
C043	1-123-318-00	ELECT	33MF	C208	1-123-356-00	ELECT	10MF
C044	1-101-004-00	CERAMIC	0.01MF	C209	1-123-356-00	ELECT	10MF
C045	1-102-514-00	CERAMIC	22PF	C210	1-102-121-00	CERAMIC	0.0022MF
C046	1-101-004-00	CERAMIC	0.01MF	C211	1-123-321-00	ELECT	220MF
C047	1-101-004-00	CERAMIC	0.01MF	C301	1-101-004-00	CERAMIC	0.01MF
C048	1-101-004-00	CERAMIC	0.01MF	C302	1-123-330-00	ELECT	22MF
C049	1-101-004-00	CERAMIC	0.01MF	C304	1-123-356-00	ELECT	10MF
C050	1-101-004-00	CERAMIC	0.01MF	C305	1-161-025-00	CERAMIC	0.1MF
C054	1-101-004-00	CERAMIC	0.01MF	C306	1-101-004-00	CERAMIC	0.01MF
C055	1-101-004-00	CERAMIC	0.01MF	C307	1-123-356-00	ELECT	10MF
C056	1-161-025-00	CERAMIC	0.1MF	C308	1-123-328-00	ELECT	4.7MF
C057	1-123-333-00	ELECT	100MF	C309	1-123-328-00	ELECT	4.7MF
C058	1-161-772-00	CERAMIC	0.1MF	CONNECTOR			
C101	1-161-025-00	CERAMIC	0.1MF	CN001	1-564-031-00	PIN, CONNECTOR 6P	
C102	1-101-004-00	CERAMIC	0.01MF	CN002	1-564-030-00	PIN, CONNECTOR 5P	
C103	1-161-025-00	CERAMIC	0.1MF	CN003	1-564-028-00	PIN, CONNECTOR 3P	
C104	1-101-004-00	CERAMIC	0.01MF	CN101	1-564-031-00	PIN, CONNECTOR 6P	
C105	1-161-025-00	CERAMIC	0.1MF	CN102	1-564-037-11	PIN, CONNECTOR 12P	
				CN103	1-564-030-21	PIN, CONNECTOR 5P	
				CN202	1-564-030-00	PIN, CONNECTOR 5P	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<u>DIODE</u>							
D001	8-719-901-33	DIODE 1SS133		Q102	8-729-800-42	TRANSISTOR 2SK152	
D002	8-719-901-33	DIODE 1SS133		Q103 =>	8-729-245-83	TRANSISTOR 2SC2458	
D003 =>	8-719-911-19	DIODE 1SS119		Q104	8-729-384-46	TRANSISTOR 2SA844-C	
D004 =>	8-719-911-19	DIODE 1SS119		Q105	8-729-603-50	TRANSISTOR 2SC403SP	
D101	8-719-911-19	DIODE 1SS119		Q106 =>	8-729-245-83	TRANSISTOR 2SC2458	
D102	8-719-911-19	DIODE 1SS119		Q107	8-729-800-42	TRANSISTOR 2SK152	
D103	8-719-911-19	DIODE 1SS119		Q108	8-729-384-46	TRANSISTOR 2SA844-C	
D104	8-719-911-19	DIODE 1SS119		Q109	8-729-603-50	TRANSISTOR 2SC403SP	
D105	8-719-911-19	DIODE 1SS119		Q110 =>	8-729-245-83	TRANSISTOR 2SC2458	
D106	8-719-911-19	DIODE 1SS119		Q111	8-729-603-50	TRANSISTOR 2SC403SP	
D201	8-719-911-19	DIODE 1SS119		Q112	8-729-384-46	TRANSISTOR 2SA844-C	
D202	8-719-911-19	DIODE 1SS119		Q113	8-729-113-33	TRANSISTOR 2SB733-4	
D203	8-719-911-19	DIODE 1SS119		Q114	8-729-603-50	TRANSISTOR 2SC403SP	
D301	8-719-911-19	DIODE 1SS119		Q115	8-729-603-50	TRANSISTOR 2SC403SP	
<u>IC</u>				Q201 =>	8-729-245-83	TRANSISTOR 2SC2458	
IC001	8-752-004-50	IC CX20045		Q301	8-729-173-37	TRANSISTOR 2SA733-P	
IC002	8-759-200-60	IC TA7060AP		Q302 =>	8-729-245-83	TRANSISTOR 2SC2458	
IC201	8-759-145-58	IC UPC4558C		<u>RESISTOR</u>			
IC301	8-759-145-58	IC UPC4558C		R001	1-247-831-00	CARBON 1K 5% 1/6W	
<u>COIL</u>				R002	1-247-816-00	CARBON 240 5% 1/6W	
L001	1-408-876-00	MICRO INDUCTOR 0.18UH		R004	1-247-857-00	CARBON 12K 5% 1/6W	
L002	1-408-427-00	MICRO INDUCTOR 330UH		R009	1-247-832-00	CARBON 1.1K 5% 1/6W	
L003	1-408-421-00	MICRO INDUCTOR 100UH		R010	1-247-829-00	CARBON 820 5% 1/6W	
L004	1-408-423-00	MICRO INDUCTOR 150UH		R012	1-247-831-00	CARBON 1K 5% 1/6W	
L006	1-408-421-00	MICRO INDUCTOR 100UH		R013	1-247-831-00	CARBON 1K 5% 1/6W	
L009	1-408-422-00	MICRO INDUCTOR 120UH		R015	1-247-831-00	CARBON 1K 5% 1/6W	
L010	1-408-411-00	MICRO INDUCTOR 15UH		R016	1-247-879-00	CARBON 100K 5% 1/6W	
L011	1-408-411-00	MICRO INDUCTOR 15UH		R017	1-247-835-00	CARBON 1.5K 5% 1/6W	
L012	1-408-878-00	MICRO INDUCTOR 0.33UH		R020	1-247-816-00	CARBON 240 5% 1/6W	
L013	1-408-427-00	MICRO INDUCTOR 330UH		R022	1-247-866-00	CARBON 30K 5% 1/6W	
L014	1-408-421-00	MICRO INDUCTOR 100UH		R023	1-247-862-00	CARBON 20K 5% 1/6W	
L015	1-408-408-00	MICRO INDUCTOR 8.2UH		R024	1-247-824-00	CARBON 510 5% 1/6W	
L016	1-408-421-00	MICRO INDUCTOR 100UH		R025	1-247-824-00	CARBON 510 5% 1/6W	
L017	1-408-415-00	MICRO INDUCTOR 33UH		R026	1-247-823-00	CARBON 470 5% 1/6W	
L101	1-408-405-00	MICRO INDUCTOR 4.7UH		R028	1-247-824-00	CARBON 510 5% 1/6W	
L102	1-408-421-00	MICRO INDUCTOR 100UH		R036	1-247-836-00	CARBON 1.6K 5% 1/6W	
L103	1-408-405-00	MICRO INDUCTOR 4.7UH		R037	1-247-864-00	CARBON 24K 5% 1/6W	
L104	1-408-421-00	MICRO INDUCTOR 100UH		R038	1-247-866-00	CARBON 30K 5% 1/6W	
L105	1-408-421-00	MICRO INDUCTOR 100UH		R039 Δ	1-212-857-00	FUSIBLE 10 5% 1/4W F	
<u>TRANSISTOR</u>				R040	1-247-831-00	CARBON 1K 5% 1/6W	
Q001 =>	8-729-245-83	TRANSISTOR 2SC2458		R042	1-247-831-00	CARBON 1K 5% 1/6W	
Q002 =>	8-729-245-83	TRANSISTOR 2SC2458		R043	1-247-829-00	CARBON 820 5% 1/6W	
Q003 =>	8-729-177-43	TRANSISTOR 2SD774		R044	1-247-855-00	CARBON 10K 5% 1/6W	
Q004 =>	8-729-204-83	TRANSISTOR 2SA1048-GR		R045	1-247-807-00	CARBON 100 5% 1/6W	
Q005 =>	8-729-204-83	TRANSISTOR 2SA1048-GR		R048	1-247-819-00	CARBON 330 5% 1/6W	
Q006 =>	8-729-245-83	TRANSISTOR 2SC2458		R049	1-247-819-00	CARBON 330 5% 1/6W	
Q101 =>	8-729-245-83	TRANSISTOR 2SC2458		R050	1-247-831-00	CARBON 1K 5% 1/6W	
				R051	1-247-857-00	CARBON 12K 5% 1/6W	
				R052	1-247-858-00	CARBON 13K 5% 1/6W	
				R053	1-247-831-00	CARBON 1K 5% 1/6W	
				R054	1-247-829-00	CARBON 820 5% 1/6W	
				R055	1-247-825-00	CARBON 560 5% 1/6W	

NOTE:

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

RP-17 AF-3

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R056	1-247-863-00	CARBON	22K 5% 1/6W	R150	1-247-842-00	CARBON	3K 5% 1/6W
R057	1-247-863-00	CARBON	22K 5% 1/6W	R201	1-247-855-00	CARBON	10K 5% 1/6W
R101	1-247-849-00	CARBON	5.6K 5% 1/6W	R202	1-247-879-00	CARBON	100K 5% 1/6W
R102	1-247-831-00	CARBON	1K 5% 1/6W	R203	1-247-879-00	CARBON	100K 5% 1/6W
R103	1-247-855-00	CARBON	10K 5% 1/6W	R204	1-247-886-00	CARBON	200K 5% 1/6W
R104	1-247-855-00	CARBON	10K 5% 1/6W				
R105	1-247-821-00	CARBON	390 5% 1/6W	R205	1-247-873-00	CARBON	56K 5% 1/6W
R106	1-247-818-00	CARBON	300 5% 1/6W	R206	1-247-855-00	CARBON	10K 5% 1/6W
R107	1-247-810-00	CARBON	130 5% 1/6W	R207	1-247-883-00	CARBON	150K 5% 1/6W
R109 A	1-212-857-00	FUSIBLE	10 5% 1/4W F	R208	1-247-866-00	CARBON	30K 5% 1/6W
R110	1-247-831-00	CARBON	1K 5% 1/6W	R209	1-247-831-00	CARBON	1K 5% 1/6W
R111	1-247-807-00	CARBON	100 5% 1/6W	R210	1-247-879-00	CARBON	100K 5% 1/6W
R112	1-247-807-00	CARBON	100 5% 1/6W	R211	1-247-871-00	CARBON	47K 5% 1/6W
R113	1-247-849-00	CARBON	5.6K 5% 1/6W	R212	1-247-859-00	CARBON	15K 5% 1/6W
R114	1-247-818-00	CARBON	300 5% 1/6W	R213 A	1-212-857-00	FUSIBLE	10 5% 1/4W F
R115	1-247-799-00	CARBON	47 5% 1/6W	R301	1-247-807-00	CARBON	100 5% 1/6W
R116	1-247-827-00	CARBON	680 5% 1/6W	R302	1-247-879-00	CARBON	100K 5% 1/6W
R117	1-247-821-00	CARBON	390 5% 1/6W	R303	1-247-855-00	CARBON	10K 5% 1/6W
R118	1-247-807-00	CARBON	100 5% 1/6W	R304	1-247-863-00	CARBON	22K 5% 1/6W
R119	1-247-855-00	CARBON	10K 5% 1/6W	R305	1-247-843-00	CARBON	3.3K 5% 1/6W
R120	1-247-855-00	CARBON	10K 5% 1/6W	R306	1-247-859-00	CARBON	15K 5% 1/6W
R122	1-247-831-00	CARBON	1K 5% 1/6W	R307	1-247-819-00	CARBON	330 5% 1/6W
R123	1-247-807-00	CARBON	100 5% 1/6W	R308	1-247-848-00	CARBON	5.1K 5% 1/6W
R124	1-247-839-00	CARBON	2.2K 5% 1/6W	R309	1-247-848-00	CARBON	5.1K 5% 1/6W
R125	1-247-869-00	CARBON	39K 5% 1/6W	R310	1-247-848-00	CARBON	5.1K 5% 1/6W
R126	1-247-831-00	CARBON	1K 5% 1/6W	R311	1-247-896-00	CARBON	510K 5% 1/6W
R127	1-247-853-00	CARBON	8.2K 5% 1/6W	R312	1-247-848-00	CARBON	5.1K 5% 1/6W
R128	1-247-855-00	CARBON	10K 5% 1/6W	R313	1-247-848-00	CARBON	5.1K 5% 1/6W
R129	1-247-820-00	CARBON	360 5% 1/6W	R314	1-247-896-00	CARBON	510K 5% 1/6W
R130	1-247-819-00	CARBON	330 5% 1/6W				
R131	1-247-799-00	CARBON	47 5% 1/6W				
R132 A	1-211-608-00	CARBON	56 5% 1/2W F				
R133	1-247-823-00	CARBON	470 5% 1/6W				
R134	1-247-826-00	CARBON	620 5% 1/6W				
R135	1-246-417-00	CARBON	4.7 5% 1/4W				
R136	1-247-807-00	CARBON	100 5% 1/6W				
R137	1-247-857-00	CARBON	12K 5% 1/6W				
R138	1-247-827-00	CARBON	680 5% 1/6W				
R139	1-247-807-00	CARBON	100 5% 1/6W				
R140	1-247-807-00	CARBON	100 5% 1/6W				
R141	1-247-831-00	CARBON	1K 5% 1/6W				
R142	1-247-849-00	CARBON	5.6K 5% 1/6W				
R143	1-247-857-00	CARBON	12K 5% 1/6W				
R144	1-247-871-00	CARBON	47K 5% 1/6W				
R145	1-247-850-00	CARBON	6.2K 5% 1/6W				
R146	1-247-842-00	CARBON	3K 5% 1/6W				
R147	1-247-857-00	CARBON	12K 5% 1/6W				
R148	1-247-871-00	CARBON	47K 5% 1/6W				
R149	1-247-850-00	CARBON	6.2K 5% 1/6W				

VARIABLE RESISTOR

RV001	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV002	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV003	1-228-745-00	RES, ADJ, CARBON 1K
RV004	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV101	1-228-990-11	RES, ADJ, METAL GLAZE 1K
RV102	1-228-990-11	RES, ADJ, METAL GLAZE 1K
RV301	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K

TRANSFORMER

T101	1-427-546-11	TRANSFORMER, I/O
T102	1-427-546-11	TRANSFORMER, I/O

THERMISTOR

TH203	1-806-718-11	THER STOR S-10K
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♣:A-6713-200-A AF-3 BOARD, COMPLETE

♣:3-684-072-01 LID, BOTTOM, AF SHIELD CASE(S)
♣:3-684-087-01 CASE (S) (MAIN), SHIELD, AF

NOTE:

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<u>B.P.F</u>							
BPF001	1-235-367-11	B.P.F		C060	1-123-353-00	ELECT 2.2MF 20% 50V	
BPF002	1-235-367-11	B.P.F		C062	1-123-353-00	ELECT 2.2MF 20% 50V	
BPF003	1-235-366-11	B.P.F		C063	1-161-025-00	CERAMIC 0.1MF 10% 25V	
BPF004	1-235-366-11	B.P.F		C064	1-161-025-00	CERAMIC 0.1MF 10% 25V	
				C065	1-161-025-00	CERAMIC 0.1MF 10% 25V	
<u>CAPACITOR</u>							
C001	1-123-356-00	ELECT 10MF 20% 16V		C069	1-123-332-00	ELECT 47MF 20% 16V	
C002	1-161-025-00	CERAMIC 0.1MF 10% 25V		C070	1-161-025-00	CERAMIC 0.1MF 10% 25V	
C003	1-161-025-00	CERAMIC 0.1MF 10% 25V		C071	1-161-025-00	CERAMIC 0.1MF 10% 25V	
C004	1-161-025-00	CERAMIC 0.1MF 10% 25V		C072	1-102-822-00	CERAMIC 390PF 5% 50V	
C006	1-161-025-00	CERAMIC 0.1MF 10% 25V		C073	1-161-025-00	CERAMIC 0.1MF 10% 25V	
C007	1-123-332-00	ELECT 47MF 20% 16V		C075	1-102-973-00	CERAMIC 100PF 5% 50V	
C008	1-161-025-00	CERAMIC 0.1MF 10% 25V		C076	1-101-884-00	CERAMIC 56PF 5% 50V	
C010	1-123-306-00	ELECT 47MF 20% 10V		C078	1-123-333-00	ELECT 100MF 20% 16V	
C011	1-123-306-00	ELECT 47MF 20% 10V		C080	1-161-025-00	CERAMIC 0.1MF 10% 25V	
C012	1-161-025-00	CERAMIC 0.1MF 10% 25V		C081	1-108-561-00	MYLAR 0.0018MF 5% 50V	
C013	1-123-294-00	ELECT 47MF 20% 6.3V		C082	1-108-565-00	MYLAR 0.0027MF 5% 50V	
C014	1-161-025-00	CERAMIC 0.1MF 10% 25V		C083	1-108-569-00	MYLAR 0.0039MF 5% 50V	
C015	1-161-025-00	CERAMIC 0.1MF 10% 25V		C084	1-123-356-00	ELECT 10MF 20% 16V	
C016	1-102-519-00	CERAMIC 36PF 5% 50V		C086	1-123-307-00	ELECT 0.1MF 10% 25V	
C017	1-161-025-00	CERAMIC 0.1MF 10% 25V		C087	1-161-031-00	CERAMIC 0.01MF 10% 25V	
C018	1-123-332-00	ELECT 47MF 20% 16V		C088	1-123-307-00	CERAMIC 100MF 20% 10V	
C020	1-161-025-00	CERAMIC 0.1MF 10% 25V		C089	1-123-332-00	ELECT 47MF 20% 16V	
C021	1-161-025-00	CERAMIC 0.1MF 10% 25V		C090	1-123-332-00	ELECT 47MF 20% 16V	
C023	1-123-356-00	ELECT 10MF 20% 16V		C091	1-123-356-00	ELECT 10MF 20% 16V	
C025	1-102-973-00	CERAMIC 100PF 5% 50V		C092	1-102-958-00	CERAMIC 20PF 5% 50V	
C026	1-101-884-00	CERAMIC 56PF 5% 50V		C093	1-130-485-00	MYLAR 0.015MF 5% 50V	
C027	1-161-025-00	CERAMIC 0.1MF 10% 25V		C095	1-130-485-00	MYLAR 0.015MF 5% 50V	
C028	1-123-353-00	ELECT 2.2MF 20% 50V		C096	1-130-494-11	MYLAR 0.082MF 5% 50V	
C030	1-123-353-00	ELECT 2.2MF 20% 50V		C098	1-130-475-00	MYLAR 0.0022MF 5% 50V	
C031	1-123-332-00	ELECT 47MF 20% 16V		C099	1-102-936-00	CERAMIC 3PF 0.25PF 50V	
C032	1-161-025-00	CERAMIC 0.1MF 10% 25V		C100	1-130-469-00	MYLAR 680PF 5% 50V	
C033	1-161-025-00	CERAMIC 0.1MF 10% 25V		C101	1-108-590-00	MYLAR 0.03MF 5% 50V	
C034	1-102-519-00	CERAMIC 36PF 5% 50V		C102	1-131-383-00	TANTALUM 10MF 10% 6.3V	
C035	1-161-025-00	CERAMIC 0.1MF 10% 25V		C103	1-131-347-00	TANTALUM 1MF 20% 16V	
C036	1-161-025-00	CERAMIC 0.1MF 10% 25V		C105	1-123-307-00	ELECT 100MF 20% 10V	
C038	1-102-973-00	CERAMIC 100PF 5% 50V		C106	1-161-013-00	CERAMIC 0.01MF 10% 25V	
C039	1-101-884-00	CERAMIC 56PF 5% 50V		C107	1-130-497-00	MYLAR 0.15MF 5% 50V	
C041	1-123-356-00	ELECT 10MF 20% 16V		C109	1-108-569-00	MYLAR 0.0039MF 5% 50V	
C042	1-123-333-00	ELECT 100MF 20% 16V		C110	1-108-565-00	MYLAR 0.0027MF 5% 50V	
C046	1-161-025-00	CERAMIC 0.1MF 10% 25V		C111	1-108-561-00	MYLAR 0.0018MF 5% 50V	
C048	1-123-333-00	ELECT 100MF 20% 16V		C115	1-123-356-00	ELECT 10MF 20% 16V	
C050	1-161-025-00	CERAMIC 0.1MF 10% 25V		C116	1-123-307-00	ELECT 100MF 20% 10V	
C051	1-161-025-00	CERAMIC 0.1MF 10% 25V		C117	1-123-332-00	ELECT 47MF 20% 16V	
C052	1-161-025-00	CERAMIC 0.1MF 10% 25V		C118	1-123-332-00	ELECT 47MF 20% 16V	
C053	1-161-025-00	CERAMIC 0.1MF 10% 25V		C119	1-102-958-00	CERAMIC 20PF 5% 50V	
C054	1-102-822-00	CERAMIC 390PF 5% 50V		C120	1-130-485-00	MYLAR 0.015MF 5% 50V	
C055	1-161-025-00	CERAMIC 0.1MF 10% 25V		C121	1-102-936-00	CERAMIC 3PF 0.25PF 50V	
C057	1-102-973-00	CERAMIC 100PF 5% 50V		C122	1-130-469-00	MYLAR 680PF 5% 50V	
C058	1-101-884-00	CERAMIC 56PF 5% 50V		C123	1-102-936-00	CERAMIC 3PF 0.25PF 50V	
C059	1-123-356-00	ELECT 10MF 20% 16V		C124	1-130-497-00	MYLAR 0.15MF 5% 50V	
				C125	1-131-383-00	TANTALUM 10MF 10% 6.3V	
				C126	1-131-347-00	TANTALUM 1MF 20% 16V	
				C127	1-108-590-00	MYLAR 0.03MF 5% 50V	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description			Remark
C128	1-130-475-00	MYLAR	0.0022MF	5%	50V	C196	1-123-332-00	ELECT	47MF	20%	16V
C130	1-130-494-11	MYLAR	0.082MF	5%	50V	C197	1-102-625-61	CERAMIC	100PF	5%	50V
C131	1-130-485-00	MYLAR	0.015MF	5%	50V	C198	1-161-013-00	CERAMIC	0.01MF	10%	25V
C132	1-123-356-00	ELECT	10MF	20%	16V	C199	1-102-517-00	CERAMIC	30PF	5%	50V
C133	1-161-013-00	CERAMIC	0.01MF	10%	25V	C200	1-102-531-00	CERAMIC	150PF	5%	50V
C134	1-123-330-00	ELECT	22MF	20%	16V	C201	1-102-531-00	CERAMIC	150PF	5%	50V
C143	1-123-332-00	ELECT	47MF	20%	16V	C202	1-161-013-00	CERAMIC	0.01MF	10%	25V
C144	1-123-330-00	ELECT	22MF	20%	16V	C203	1-161-013-00	CERAMIC	0.01MF	10%	25V
C146	1-123-332-00	ELECT	47MF	20%	16V	C208	1-161-025-00	CERAMIC	0.1MF	10%	25V
C147	1-123-330-00	ELECT	22MF	20%	16V	C209	1-123-356-00	ELECT	10MF	20%	16V
C150	1-123-332-00	ELECT	47MF	20%	16V	C211	1-123-332-00	ELECT	47MF	20%	16V
C151	1-123-381-00	ELECT	2.2MF	20%	50V	C213	1-123-332-00	ELECT	47MF	20%	16V
C152	1-102-973-00	CERAMIC	100PF	5%	50V	C216	1-123-381-00	ELECT	2.2MF	20%	50V
C153	1-123-332-00	ELECT	47MF	20%	16V	C217	1-123-381-00	ELECT	2.2MF	20%	50V
C154	1-123-381-00	ELECT	2.2MF	20%	50V	C221	1-123-330-00	ELECT	22MF	20%	16V
C155	1-102-973-00	CERAMIC	100PF	5%	50V	C222	1-123-330-00	ELECT	22MF	20%	16V
C156	1-123-330-00	ELECT	22MF	20%	16V	C223	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C157	1-123-330-00	ELECT	22MF	20%	16V	C224	1-123-380-00	ELECT	1MF	20%	50V
C158	1-123-330-00	ELECT	22MF	20%	16V	C225	1-161-013-00	CERAMIC	0.01MF	10%	25V
C159	1-123-318-00	ELECT	33MF	20%	16V	C226	1-161-013-00	CERAMIC	0.01MF	10%	25V
C160	1-123-332-00	ELECT	47MF	20%	16V	C227	1-161-013-00	CERAMIC	0.01MF	10%	25V
C161	1-123-330-00	ELECT	22MF	20%	16V	C229	1-130-471-00	MYLAR	0.001MF	5%	50V
C162	1-123-318-00	ELECT	33MF	20%	16V	C232	1-130-471-00	MYLAR	0.001MF	5%	50V
C163	1-123-356-00	ELECT	10MF	20%	16V	C235	1-161-013-00	CERAMIC	0.01MF	10%	25V
C164	1-123-356-00	ELECT	10MF	20%	16V	C236	1-130-491-00	MYLAR	0.047MF	5%	50V
C165	1-123-330-00	ELECT	22MF	20%	16V	C237	1-130-491-00	MYLAR	0.047MF	5%	50V
C166	1-123-356-00	ELECT	10MF	20%	16V	C238	1-123-330-00	ELECT	22MF	20%	16V
C167	1-123-380-00	ELECT	1MF	20%	50V	C240	1-161-025-00	CERAMIC	0.1MF	10%	25V
C168	1-123-356-00	ELECT	10MF	20%	16V	C241	1-123-356-00	ELECT	10MF	20%	16V
C169	1-123-330-00	ELECT	22MF	20%	16V	C501	1-124-233-00	ELECT	10MF	20%	16V
C170	1-123-380-00	ELECT	1MF	20%	50V	C701	1-123-356-00	ELECT	10MF	20%	16V
C171	1-161-025-00	CERAMIC	0.1MF	10%	25V	C702	1-123-356-00	ELECT	10MF	20%	16V
C173	1-161-013-00	CERAMIC	0.01MF	10%	25V	C704	1-123-322-00	ELECT	330MF	20%	16V
C175	1-123-332-00	ELECT	47MF	20%	16V	C706	1-124-231-00	ELECT	4.7MF	20%	16V
C176	1-102-976-00	CERAMIC	180PF	5%	50V	C709	1-123-381-00	ELECT	2.2MF	20%	50V
C177	1-161-013-00	CERAMIC	0.01MF	10%	25V	C710	1-130-469-00	MYLAR	680PF	5%	50V
C178	1-102-522-00	CERAMIC	51PF	5%	50V	C711	1-130-469-00	MYLAR	680PF	5%	50V
C179	1-102-978-00	CERAMIC	220PF	5%	50V	C712	1-123-332-00	ELECT	47MF	20%	16V
C180	1-102-978-00	CERAMIC	220PF	5%	50V	C713	1-123-332-00	ELECT	47MF	20%	16V
C181	1-161-013-00	CERAMIC	0.01MF	10%	25V	C714	1-130-469-00	MYLAR	680PF	5%	50V
C182	1-123-332-00	ELECT	47MF	20%	16V	C715	1-130-469-00	MYLAR	680PF	5%	50V
C183	1-123-332-00	ELECT	47MF	20%	16V	C722	1-124-231-00	ELECT	4.7MF	20%	16V
C184	1-102-529-00	CERAMIC	100PF	5%	50V	C724	1-123-380-00	ELECT	1MF	20%	50V
C185	1-123-332-00	ELECT	47MF	20%	16V	C725	1-123-380-00	ELECT	1MF	20%	50V
C186	1-123-332-00	ELECT	47MF	20%	16V	C726	1-161-039-00	CERAMIC	0.001MF	10%	25V
C187	1-161-025-00	CERAMIC	0.1MF	10%	25V	C727	1-102-824-00	CERAMIC	470PF	5%	50V
C189	1-161-025-00	CERAMIC	0.1MF	10%	25V	C728	1-102-824-00	CERAMIC	470PF	5%	50V
C190	1-123-332-00	ELECT	47MF	20%	16V	C730	1-161-013-00	CERAMIC	0.01MF	10%	25V
C191	1-161-025-00	CERAMIC	0.1MF	10%	25V	C731	1-123-332-00	ELECT	47MF	20%	16V
C192	1-123-332-00	ELECT	47MF	20%	16V	C732	1-123-332-00	ELECT	47MF	20%	16V
C193	1-102-529-00	CERAMIC	100PF	5%	50V	C733	1-161-013-00	CERAMIC	0.01MF	10%	25V
C194	1-123-332-00	ELECT	47MF	20%	16V	C734	1-124-168-00	ELECT	100MF	20%	16V
C195	1-123-332-00	ELECT	47MF	20%	16V	C735	1-123-353-00	ELECT	2.2MF	20%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C736	1-123-353-00	ELECT 2.2MF	20% 50V	IC002	8-759-324-12	IC HA12412	
C737	1-161-017-00	CERAMIC 0.022MF	10% 25V	IC003	8-759-101-67	IC UPC1167C2	
C738	1-123-356-00	ELECT 10MF	20% 16V	IC004	8-759-101-67	IC UPC1167C2	
C739	1-161-019-00	CERAMIC 0.033MF	10% 25V	IC005	8-759-103-93	IC UPC393C	
C740	1-123-307-00	ELECT 100MF	20% 10V	IC006	8-759-990-82	IC TL082CP	
<u>CONNECTOR</u>				IC007	8-759-990-82	IC TL082CP	
CN001	1-560-892-00	PIN, CONNECTOR 4P		IC008	8-759-240-66	IC TC4066BP	
CN002	1-560-891-00	PIN, CONNECTOR 3P		IC009	8-759-240-66	IC TC4066BP	
CN003	1-560-898-00	PIN, CONNECTOR 10P		IC010	8-759-400-04	IC AN6120	
CN004	1-560-896-00	PIN, CONNECTOR 8P		IC011	8-759-400-04	IC AN6120	
CN005	1-560-893-00	PIN, CONNECTOR 5P		IC012	8-752-009-70	IC CX20097	
CN006	1-560-892-00	PIN, CONNECTOR 4P		IC013	8-759-700-62	IC NJM4562D	
CN007	1-560-892-00	PIN, CONNECTOR 4P		IC014	8-759-240-52	IC TC4052BP	
CN008	1-560-897-00	PIN, CONNECTOR 9P		IC015	8-759-700-62	IC NJM4562D	
CN009	1-560-891-00	PIN, CONNECTOR 3P		IC016	8-752-006-10	IC CX20061	
CN011	1-560-900-00	PIN, CONNECTOR 12P		IC017	8-752-006-10	IC CX20061	
CN012	1-560-890-00	PIN, CONNECTOR 2P		IC018	8-759-240-93	IC TC4093BP	
<u>DIODE</u>				IC019	8-759-240-01	IC TC4001BP	
D007	8-719-911-19	DIODE 1SS119		IC020	8-759-910-68	IC MB88201-152G	
D008	8-719-911-19	DIODE 1SS119		<u>COIL</u>			
D011	8-719-000-12	DIODE MC931		L001	1-408-421-00	MICRO INDUCTOR 100UH	
D013	8-719-000-12	DIODE MC931		L002	1-408-413-00	MICRO INDUCTOR 22UH	
D017	=>8-719-911-19	DIODE 1SS119		L003	1-410-079-11	COIL, PHASE SIFT 33UH	
D019	=>8-719-911-19	DIODE 1SS119		L004	1-410-079-11	COIL, PHASE SIFT 33UH	
D025	8-719-162-07	DIODE RD6.2E-B		L005	1-410-079-11	COIL, PHASE SIFT 33UH	
D027	=>8-719-911-19	DIODE 1SS119		L007	1-408-415-00	MICRO INDUCTOR 33UH	
D504	8-719-911-19	DIODE 1SS119		L008	1-408-418-00	MICRO INDUCTOR 56UH	
D505	8-719-156-07	DIODE RD5.6E-B		L010	1-408-413-00	MICRO INDUCTOR 22UH	
D508	8-719-162-07	DIODE RD6.2E-B		L011	1-408-416-00	MICRO INDUCTOR 39UH	
D509	8-719-812-33	DIODE TLG123A		L012	1-410-079-11	COIL, PHASE SIFT 33UH	
D510	8-719-812-33	DIODE TLG123A		L013	1-408-413-00	MICRO INDUCTOR 22UH	
D511	8-719-812-33	DIODE TLG123A		L014	1-408-413-00	MICRO INDUCTOR 22UH	
D512	8-719-812-33	DIODE TLG123A		L015	1-408-413-00	MICRO INDUCTOR 22UH	
D514	8-719-911-19	DIODE 1SS119		L016	1-408-413-00	MICRO INDUCTOR 22UH	
D515	8-719-911-19	DIODE 1SS119		L020	1-408-417-00	MICRO INDUCTOR 47UH	
D516	8-719-911-19	DIODE 1SS119		L021	1-408-417-00	MICRO INDUCTOR 47UH	
D517	8-719-911-19	DIODE 1SS119		L022	1-408-417-00	MICRO INDUCTOR 47UH	
D521	8-719-911-19	DIODE 1SS119		<u>L.P.F</u>			
D522	8-719-911-19	DIODE 1SS119		LPF001	1-235-365-11	L.P.F	
D523	8-719-911-19	DIODE 1SS119		LPF002	1-235-365-11	L.P.F	
D524	8-719-812-33	DIODE TLG123A		<u>IC LINK</u>			
D525	8-719-175-07	DIODE RD7.5E-B		PS001	1-532-605-11	LINK. IC (N-10 0.4A)	
D526	8-719-175-07	DIODE RD7.5E-B		<u>TRANSISTOR</u>			
D527	8-719-911-19	DIODE 1SS119		Q001	8-729-113-33	TRANSISTOR 2SB733-4	
D528	8-719-911-19	DIODE 1SS119		Q002	=>8-729-245-83	TRANSISTOR 2SC2458	
D529	8-719-911-19	DIODE 1SS119		Q003	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
D530	8-719-911-19	DIODE 1SS119		Q004	=>8-729-245-83	TRANSISTOR 2SC2458	
D531	8-719-911-19	DIODE 1SS119		Q007	=>8-729-177-43	TRANSISTOR 2SD774	
<u>IC</u>							
IC001	8-759-324-12	IC HA12412					

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

AF-3

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q008	8-729-603-50	TRANSISTOR 2SC403SP		R005	1-247-867-00	CARBON 33K 5% 1/6W	
Q009	8-729-603-50	TRANSISTOR 2SC403SP		R006	1-247-823-00	CARBON 470 5% 1/6W	
Q010	8-729-106-07	TRANSISTOR 2SK514-H		R007	1-247-873-00	CARBON 56K 5% 1/6W	
Q012	8-729-965-22	TRANSISTOR 2SC1652		R008	1-247-855-00	CARBON 10K 5% 1/6W	
Q013	8-729-603-50	TRANSISTOR 2SC403SP		R012	1-247-867-00	CARBON 33K 5% 1/6W	
Q015	8-729-106-07	TRANSISTOR 2SK514-H		R013	1-247-855-00	CARBON 10K 5% 1/6W	
Q016	8-729-603-50	TRANSISTOR 2SC403SP		R014	1-247-855-00	CARBON 10K 5% 1/6W	
Q017	=>8-729-245-83	TRANSISTOR 2SC2458		R026	1-247-823-00	CARBON 470 5% 1/6W	
Q018	8-729-117-54	TRANSISTOR 2SA1175		R027	1-247-861-00	CARBON 18K 5% 1/6W	
Q019	=>8-729-245-83	TRANSISTOR 2SC2458		R028	1-247-831-00	CARBON 1K 5% 1/6W	
Q020	=>8-729-245-83	TRANSISTOR 2SC2458		R029	1-247-825-00	CARBON 560 5% 1/6W	
Q021	=>8-729-245-83	TRANSISTOR 2SC2458		R030	1-247-815-00	CARBON 220 5% 1/6W	
Q022	=>8-729-245-83	TRANSISTOR 2SC2458		R031	1-247-822-00	CARBON 430 5% 1/6W	
Q023	=>8-729-245-83	TRANSISTOR 2SC2458		R033	1-247-809-00	CARBON 120 5% 1/6W	
Q024	=>8-729-245-83	TRANSISTOR 2SC2458		R034	1-247-839-00	CARBON 2.2K 5% 1/6W	
Q030	=>8-729-245-83	TRANSISTOR 2SC2458		R035	A. 1-212-853-00	FUSIBLE 6.8 5% 1/4W F	
Q031	=>8-729-245-83	TRANSISTOR 2SC2458		R036	1-247-855-00	CARBON 10K 5% 1/6W	
Q032	8-729-965-22	TRANSISTOR 2SC1652		R037	1-247-823-00	CARBON 470 5% 1/6W	
Q034	8-729-965-22	TRANSISTOR 2SC1652		R038	1-247-855-00	CARBON 10K 5% 1/6W	
Q035	8-729-965-22	TRANSISTOR 2SC1652		R039	1-247-855-00	CARBON 10K 5% 1/6W	
Q036	8-729-965-22	TRANSISTOR 2SC1652		R040	1-247-855-00	CARBON 10K 5% 1/6W	
Q037	=>8-729-245-83	TRANSISTOR 2SC2458		R042	1-247-855-00	CARBON 10K 5% 1/6W	
Q038	=>8-729-245-83	TRANSISTOR 2SC2458		R043	1-247-855-00	CARBON 10K 5% 1/6W	
Q044	8-729-965-22	TRANSISTOR 2SC1652		R044	1-247-823-00	CARBON 470 5% 1/6W	
Q046	=>8-729-245-83	TRANSISTOR 2SC2458		R045	1-247-861-00	CARBON 18K 5% 1/6W	
Q049	8-729-900-89	TRANSISTOR DTC144ES		R046	1-247-831-00	CARBON 1K 5% 1/6W	
Q701	=>8-729-245-83	TRANSISTOR 2SC2458		R047	1-247-825-00	CARBON 560 5% 1/6W	
Q703	=>8-729-245-83	TRANSISTOR 2SC2458		R048	1-247-847-00	CARBON 4.7K 5% 1/6W	
Q704	=>8-729-245-83	TRANSISTOR 2SC2458		R049	1-247-815-00	CARBON 220 5% 1/6W	
Q705	=>8-729-245-83	TRANSISTOR 2SC2458		R050	1-247-822-00	CARBON 430 5% 1/6W	
Q706	8-729-965-22	TRANSISTOR 2SC1652		R052	1-247-809-00	CARBON 120 5% 1/6W	
Q707	8-729-993-72	TRANSISTOR 2SA937		R054	1-247-855-00	CARBON 10K 5% 1/6W	
Q708	=>8-729-245-83	TRANSISTOR 2SC2458		R055	1-247-855-00	CARBON 10K 5% 1/6W	
Q709	8-729-117-54	TRANSISTOR 2SA1175		R056	1-247-855-00	CARBON 10K 5% 1/6W	
Q710	8-729-117-54	TRANSISTOR 2SA1175		R057	1-247-855-00	CARBON 10K 5% 1/6W	
Q711	=>8-729-245-83	TRANSISTOR 2SC2458		R061	1-247-831-00	CARBON 1K 5% 1/6W	
Q712	8-729-117-54	TRANSISTOR 2SA1175		R069	1-247-839-00	CARBON 2.2K 5% 1/6W	
Q713	8-729-117-54	TRANSISTOR 2SA1175		R071	1-247-855-00	CARBON 10K 5% 1/6W	
Q714	8-729-384-48	TRANSISTOR 2SA844		R072	1-247-867-00	CARBON 33K 5% 1/6W	
Q715	8-729-384-48	TRANSISTOR 2SA844		R073	1-247-831-00	CARBON 1K 5% 1/6W	
Q716	=>8-729-245-83	TRANSISTOR 2SC2458		R074	1-247-867-00	CARBON 33K 5% 1/6W	
Q720	8-729-117-54	TRANSISTOR 2SA1175		R078	1-247-823-00	CARBON 470 5% 1/6W	
Q721	=>8-729-245-83	TRANSISTOR 2SC2458		R079	1-247-831-00	CARBON 1K 5% 1/6W	
Q722	=>8-729-245-83	TRANSISTOR 2SC2458		R080	1-247-825-00	CARBON 560 5% 1/6W	
Q723	8-729-900-33	TRANSISTOR DTC144EF		R081	1-247-813-00	CARBON 180 5% 1/6W	
Q724	=>8-729-245-83	TRANSISTOR 2SC2458		R082	1-247-815-00	CARBON 220 5% 1/6W	
Q725	8-729-117-54	TRANSISTOR 2SA1175		R083	1-247-822-00	CARBON 430 5% 1/6W	
RESISTOR				R085	1-247-814-00	CARBON 200 5% 1/6W	
R001	1-247-807-00	CARBON 100 5% 1/6W		R087	1-247-855-00	CARBON 10K 5% 1/6W	
R002	1-247-847-00	CARBON 4.7K 5% 1/6W		R088	1-247-855-00	CARBON 10K 5% 1/6W	
R003	1-247-831-00	CARBON 1K 5% 1/6W		R089	1-247-855-00	CARBON 10K 5% 1/6W	
R004	1-247-867-00	CARBON 33K 5% 1/6W		R090	1-247-823-00	CARBON 470 5% 1/6W	
				R091	1-247-855-00	CARBON 10K 5% 1/6W	

NOTE:

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R093	1-247-831-00	CARBON	1K 5% 1/6W	R164	1-247-855-00	CARBON	10K 5% 1/6W
R099	1-247-838-00	CARBON	2K 5% 1/6W	R165	1-247-842-00	CARBON	3K 5% 1/6W
R105	1-247-839-00	CARBON	2.2K 5% 1/6W	R166	1-247-822-00	CARBON	430 5% 1/6W
R106	1-247-823-00	CARBON	470 5% 1/6W	R167	1-247-858-00	CARBON	13K 5% 1/6W
R107	1-247-831-00	CARBON	1K 5% 1/6W	R168	1-247-838-00	CARBON	2K 5% 1/6W
R108	1-247-825-00	CARBON	560 5% 1/6W	R169	1-247-858-00	CARBON	13K 5% 1/6W
R110	1-247-839-00	CARBON	2.2K 5% 1/6W	R170	1-247-842-00	CARBON	3K 5% 1/6W
R111	1-247-867-00	CARBON	33K 5% 1/6W	R172	1-247-865-00	CARBON	27K 5% 1/6W
R112	1-247-855-00	CARBON	10K 5% 1/6W	R173	1-247-895-00	CARBON	470K 5% 1/6W
R113	1-247-815-00	CARBON	220 5% 1/6W	R174	1-247-849-00	CARBON	5.6K 5% 1/6W
R115	1-247-822-00	CARBON	430 5% 1/6W	R175	1-247-836-00	CARBON	1.6K 5% 1/6W
R116	1-247-814-00	CARBON	200 5% 1/6W	R176	1-247-814-00	CARBON	200 5% 1/6W
R117	1-247-855-00	CARBON	10K 5% 1/6W	R177	1-247-848-00	CARBON	5.1K 5% 1/6W
R118	1-247-855-00	CARBON	10K 5% 1/6W	R178	1-247-828-00	CARBON	750 5% 1/6W
R119	1-247-855-00	CARBON	10K 5% 1/6W	R179	△ 1-247-815-00	CARBON	220 5% 1/6W
R120	1-247-855-00	CARBON	10K 5% 1/6W	R180	1-215-465-00	METAL	68K 1% 1/6W
R121	1-247-867-00	CARBON	33K 5% 1/6W	R181	1-215-446-00	METAL	11K 1% 1/6W
R122	1-247-807-00	CARBON	100 5% 1/6W	R183	1-215-462-00	METAL	51K 1% 1/6W
R123	1-247-863-00	CARBON	22K 5% 1/6W	R184	1-215-462-00	METAL	51K 1% 1/6W
R124	1-247-863-00	CARBON	22K 5% 1/6W	R185	1-247-871-00	CARBON	47K 5% 1/6W
R125	1-247-863-00	CARBON	22K 5% 1/6W	R190	1-215-446-00	METAL	11K 1% 1/6W
R126	1-247-839-00	CARBON	2.2K 5% 1/6W	R191	1-215-465-00	METAL	68K 1% 1/6W
R127	1-247-863-00	CARBON	22K 5% 1/6W	R194	1-247-872-00	CARBON	51K 5% 1/6W
R128	1-247-863-00	CARBON	22K 5% 1/6W	R200	1-247-872-00	CARBON	51K 5% 1/6W
R129	1-247-863-00	CARBON	22K 5% 1/6W	R205	1-247-855-00	CARBON	10K 5% 1/6W
R130	1-247-839-00	CARBON	2.2K 5% 1/6W	R206	1-247-859-00	CARBON	15K 5% 1/6W
R132	1-247-855-00	CARBON	10K 5% 1/6W	R217	△ 1-247-815-00	CARBON	220 5% 1/6W
R133	1-247-859-00	CARBON	15K 5% 1/6W	R218	1-247-871-00	CARBON	47K 5% 1/6W
R134	1-247-840-00	CARBON	2.4K 5% 1/6W	R220	1-247-875-00	CARBON	68K 5% 1/6W
R135	1-247-824-00	CARBON	510 5% 1/6W	R221	1-247-850-00	CARBON	6.2K 5% 1/6W
R136	1-247-855-00	CARBON	10K 5% 1/6W	R222	1-247-863-00	CARBON	22K 5% 1/6W
R137	1-247-855-00	CARBON	10K 5% 1/6W	R223	1-247-831-00	CARBON	1K 5% 1/6W
R138	1-247-822-00	CARBON	430 5% 1/6W	R224	1-247-887-00	CARBON	220K 5% 1/6W
R139	1-247-842-00	CARBON	3K 5% 1/6W	R225	1-247-842-00	CARBON	3K 5% 1/6W
R140	1-247-858-00	CARBON	13K 5% 1/6W	R226	1-247-879-00	CARBON	100K 5% 1/6W
R141	1-247-858-00	CARBON	13K 5% 1/6W	R227	1-247-855-00	CARBON	10K 5% 1/6W
R142	1-247-838-00	CARBON	2K 5% 1/6W	R228	1-247-879-00	CARBON	100K 5% 1/6W
R143	1-247-842-00	CARBON	3K 5% 1/6W	R229	1-247-831-00	CARBON	1K 5% 1/6W
R144	1-247-895-00	CARBON	470K 5% 1/6W	R230	1-247-887-00	CARBON	220K 5% 1/6W
R146	1-247-849-00	CARBON	5.6K 5% 1/6W	R231	1-247-842-00	CARBON	3K 5% 1/6W
R147	1-247-865-00	CARBON	27K 5% 1/6W	R232	1-247-848-00	CARBON	5.1K 5% 1/6W
R148	1-247-848-00	CARBON	5.1K 5% 1/6W	R233	1-247-848-00	CARBON	5.1K 5% 1/6W
R149	1-247-828-00	CARBON	750 5% 1/6W	R234	△ 1-247-815-00	CARBON	220 5% 1/6W
R150	1-247-814-00	CARBON	200 5% 1/6W	R235	1-247-871-00	CARBON	47K 5% 1/6W
R151	1-247-851-00	CARBON	6.8K 5% 1/6W	R236	1-247-871-00	CARBON	47K 5% 1/6W
R152	1-247-847-00	CARBON	4.7K 5% 1/6W	R237	1-247-839-00	CARBON	2.2K 5% 1/6W
R157	1-247-855-00	CARBON	10K 5% 1/6W	R239	1-247-863-00	CARBON	22K 5% 1/6W
R158	1-247-859-00	CARBON	15K 5% 1/6W	R240	1-247-871-00	CARBON	47K 5% 1/6W
R159	1-247-840-00	CARBON	2.4K 5% 1/6W	R241	1-247-875-00	CARBON	68K 5% 1/6W
R160	1-247-824-00	CARBON	510 5% 1/6W	R243	1-247-850-00	CARBON	6.2K 5% 1/6W
R161	1-247-855-00	CARBON	10K 5% 1/6W	R244	1-247-855-00	CARBON	10K 5% 1/6W
R162	1-247-843-00	CARBON	3.3K 5% 1/6W	R245	1-247-855-00	CARBON	10K 5% 1/6W
R163	1-247-855-00	CARBON	10K 5% 1/6W	R246	1-247-855-00	CARBON	10K 5% 1/6W

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Ref.No	Part No.	Description				Remark	Ref.No	Part No.	Description				Remark
R247	1-247-855-00	CARBON	10K	5%	1/6W		R325	1-247-879-00	CARBON	100K	5%	1/6W	
R248	1-247-863-00	CARBON	22K	5%	1/6W		R326	1-247-831-00	CARBON	1K	5%	1/6W	
R249	1-247-855-00	CARBON	10K	5%	1/6W		R327	1-247-859-00	CARBON	15K	5%	1/6W	
R253	1-247-855-00	CARBON	10K	5%	1/6W		R330	1-247-838-00	CARBON	2K	5%	1/6W	
R255	1-247-867-00	CARBON	33K	5%	1/6W		R332	1-247-862-00	CARBON	20K	5%	1/6W	
R256	1-247-863-00	CARBON	22K	5%	1/6W		R338	1-247-862-00	CARBON	20K	5%	1/6W	
R262	1-247-851-00	CARBON	6.8K	5%	1/6W		R343	1-247-807-00	CARBON	100	5%	1/6W	
R263	1-247-823-00	CARBON	470	5%	1/6W		R344	1-247-807-00	CARBON	100	5%	1/6W	
R264	1-247-861-00	CARBON	18K	5%	1/6W		R345	1-247-820-00	CARBON	360	5%	1/6W	
R265	1-247-861-00	CARBON	18K	5%	1/6W		R346	1-247-820-00	CARBON	360	5%	1/6W	
R266	1-247-807-00	CARBON	100	5%	1/6W		R350	1-247-843-00	CARBON	3.3K	5%	1/6W	
R267	1-215-442-00	METAL	7.5K	1%	1/6W		R351	1-247-843-00	CARBON	3.3K	5%	1/6W	
R268	1-247-844-00	CARBON	3.6K	5%	1/6W		R352	1-247-857-00	CARBON	12K	5%	1/6W	
R269	1-247-855-00	CARBON	10K	5%	1/6W		R601	1-247-871-00	CARBON	47K	5%	1/6W	
R270	1-247-855-00	CARBON	10K	5%	1/6W		R701	1-247-855-00	CARBON	10K	5%	1/6W	
R271	1-247-875-00	CARBON	68K	5%	1/6W		R702	1-247-855-00	CARBON	10K	5%	1/6W	
R272	1-247-871-00	CARBON	47K	5%	1/6W		R703	1-247-847-00	CARBON	4.7K	5%	1/6W	
R273	1-247-871-00	CARBON	47K	5%	1/6W		R706	1-247-843-00	CARBON	3.3K	5%	1/6W	
R275	1-247-851-00	CARBON	6.8K	5%	1/6W		R707	1-247-847-00	CARBON	4.7K	5%	1/6W	
R276	1-247-823-00	CARBON	470	5%	1/6W		R708	1-247-843-00	CARBON	3.3K	5%	1/6W	
R277	1-247-861-00	CARBON	18K	5%	1/6W		R711	1-247-867-00	CARBON	33K	5%	1/6W	
R278	1-247-861-00	CARBON	18K	5%	1/6W		R712	1-247-867-00	CARBON	33K	5%	1/6W	
R279	1-247-807-00	CARBON	100	5%	1/6W		R713	1-247-855-00	CARBON	10K	5%	1/6W	
R280	1-215-421-00	METAL	1K	1%	1/6W		R714	1-247-867-00	CARBON	33K	5%	1/6W	
R281	1-247-844-00	CARBON	3.6K	5%	1/6W		R715	1-247-867-00	CARBON	33K	5%	1/6W	
R282	1-247-855-00	CARBON	10K	5%	1/6W		R716	1-247-855-00	CARBON	10K	5%	1/6W	
R283	1-247-855-00	CARBON	10K	5%	1/6W		R718	1-247-849-00	CARBON	5.6K	5%	1/6W	
R284	1-247-869-00	CARBON	39K	5%	1/6W		R719	1-247-849-00	CARBON	5.6K	5%	1/6W	
R285	1-247-871-00	CARBON	47K	5%	1/6W		R720	1-247-849-00	CARBON	5.6K	5%	1/6W	
R286	1-247-871-00	CARBON	47K	5%	1/6W		R721	1-247-849-00	CARBON	5.6K	5%	1/6W	
R288	1-215-453-00	METAL	22K	1%	1/6W		R722	1-247-867-00	CARBON	33K	5%	1/6W	
R289	1-215-453-00	METAL	22K	1%	1/6W		R724	1-247-867-00	CARBON	33K	5%	1/6W	
R290	1-247-807-00	CARBON	100	5%	1/6W		R725	1-247-855-00	CARBON	10K	5%	1/6W	
R291	1-247-831-00	CARBON	1K	5%	1/6W		R726	1-247-867-00	CARBON	33K	5%	1/6W	
R293	1-247-867-00	CARBON	33K	5%	1/6W		R727	1-247-867-00	CARBON	33K	5%	1/6W	
R296	1-247-867-00	CARBON	33K	5%	1/6W		R728	1-247-855-00	CARBON	10K	5%	1/6W	
R297	1-247-848-00	CARBON	5.1K	5%	1/6W		R729	1-247-839-00	CARBON	2.2K	5%	1/6W	
R298	1-247-863-00	CARBON	22K	5%	1/6W		R730	1-247-813-00	CARBON	180	5%	1/6W	
R299	1-247-863-00	CARBON	22K	5%	1/6W		R731	1-247-813-00	CARBON	180	5%	1/6W	
R300	1-247-863-00	CARBON	22K	5%	1/6W		R732	1-247-867-00	CARBON	33K	5%	1/6W	
R301	1-247-855-00	CARBON	10K	5%	1/6W		R734	1-247-812-00	CARBON	160	5%	1/6W	
R302	1-247-855-00	CARBON	10K	5%	1/6W		R735	1-247-812-00	CARBON	160	5%	1/6W	
R303	1-247-871-00	CARBON	47K	5%	1/6W		R736	1-247-867-00	CARBON	33K	5%	1/6W	
R304	1-247-855-00	CARBON	10K	5%	1/6W		R737	1-247-821-00	CARBON	390	5%	1/6W	
R308	1-247-863-00	CARBON	22K	5%	1/6W		R739	1-247-863-00	CARBON	22K	5%	1/6W	
R310	1-247-847-00	CARBON	4.7K	5%	1/6W		R740	1-247-863-00	CARBON	22K	5%	1/6W	
R311	1-247-855-00	CARBON	10K	5%	1/6W		R741	1-247-855-00	CARBON	10K	5%	1/6W	
R312	1-247-843-00	CARBON	3.3K	5%	1/6W		R742	1-247-859-00	CARBON	15K	5%	1/6W	
R313	1-247-855-00	CARBON	10K	5%	1/6W		R743	1-247-859-00	CARBON	15K	5%	1/6W	
R315	1-247-855-00	CARBON	10K	5%	1/6W		R744	1-247-847-00	CARBON	4.7K	5%	1/6W	
R322	1-247-879-00	CARBON	100K	5%	1/6W		R745	1-247-847-00	CARBON	4.7K	5%	1/6W	
R323	1-247-839-00	CARBON	2.2K	5%	1/6W		R746	1-247-855-00	CARBON	10K	5%	1/6W	
R324	1-247-871-00	CARBON	47K	5%	1/6W		R747	1-247-855-00	CARBON	10K	5%	1/6W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description			
R748	1-247-843-00	CARBON	3.3K	5%	1/6W
R749	1-247-843-00	CARBON	3.3K	5%	1/6W
R750	1-247-871-00	CARBON	47K	5%	1/6W
R751	1-247-871-00	CARBON	47K	5%	1/6W
R754	1-247-903-00	CARBON	1M	5%	1/6W
R755	1-247-903-00	CARBON	1M	5%	1/6W
R756	1-247-837-00	CARBON	1.8K	5%	1/6W
R757	1-247-837-00	CARBON	1.8K	5%	1/6W
R758	1-247-807-00	CARBON	100	5%	1/6W
R759	1-247-807-00	CARBON	100	5%	1/6W
R780	1-247-825-00	CARBON	560	5%	1/6W
R781	1-247-825-00	CARBON	560	5%	1/6W
R782	1-247-867-00	CARBON	33K	5%	1/6W
R783	1-247-867-00	CARBON	33K	5%	1/6W
R784	1-247-825-00	CARBON	560	5%	1/6W
R785	1-247-825-00	CARBON	560	5%	1/6W
R786	1-247-855-00	CARBON	10K	5%	1/6W
R787	1-247-855-00	CARBON	10K	5%	1/6W
R788 Δ	1-247-831-00	CARBON	1K	5%	1/6W
R789	1-247-896-00	CARBON	510K	5%	1/6W
R790	1-247-879-00	CARBON	100K	5%	1/6W
R793	1-247-879-00	CARBON	100K	5%	1/6W
R794	1-247-847-00	CARBON	4.7K	5%	1/6W
R795	1-247-847-00	CARBON	4.7K	5%	1/6W
R796	1-247-839-00	CARBON	2.2K	5%	1/6W
R797	1-247-839-00	CARBON	2.2K	5%	1/6W
R798	1-247-803-00	CARBON	68	5%	1/6W
R799	1-247-831-00	CARBON	1K	5%	1/6W
R800	1-247-831-00	CARBON	1K	5%	1/6W
R801 Δ	1-247-815-00	CARBON	220	5%	1/6W
R802 Δ	1-247-815-00	CARBON	220	5%	1/6W
R803	1-247-875-00	CARBON	68K	5%	1/6W
R804	1-247-855-00	CARBON	10K	5%	1/6W
R805	1-247-855-00	CARBON	10K	5%	1/6W
R806	1-247-855-00	CARBON	10K	5%	1/6W
R807	1-247-815-00	CARBON	220	5%	1/6W
R808	1-247-815-00	CARBON	220	5%	1/6W
R809	1-247-813-00	CARBON	180	5%	1/6W
R810	1-247-855-00	CARBON	10K	5%	1/6W
R811	1-247-855-00	CARBON	10K	5%	1/6W
R812	1-247-855-00	CARBON	10K	5%	1/6W
R813	1-247-855-00	CARBON	10K	5%	1/6W
R814	1-247-855-00	CARBON	10K	5%	1/6W
R815	1-247-855-00	CARBON	10K	5%	1/6W
R816	1-247-895-00	CARBON	470K	5%	1/6W
R817	1-247-879-00	CARBON	100K	5%	1/6W

VARIABLE RESISTOR

RV005	1-228-996-00	RES.	ADJ.	METAL	GLAZE	47K
RV006	1-228-996-00	RES.	ADJ.	METAL	GLAZE	47K
RV010	1-228-996-00	RES.	ADJ.	METAL	GLAZE	47K
RV012	1-228-996-00	RES.	ADJ.	METAL	GLAZE	47K
RV013	1-228-993-00	RES.	ADJ.	METAL	GLAZE	4.7K
RV014	1-228-990-00	RES.	ADJ.	METAL	GLAZE	1K

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
RV015	1-228-991-00	RES, ADJ, METAL GLAZE	2.2K
RV016	1-228-990-00	RES, ADJ, METAL GLAZE	1K
RV017	1-228-991-00	RES, ADJ, METAL GLAZE	2.2K
RV018	1-228-993-00	RES, ADJ, METAL GLAZE	4.7K
RV019	1-228-993-00	RES, ADJ, METAL GLAZE	4.7K
RV020	1-228-997-00	RES, ADJ, METAL GLAZE	100K
RV021	1-228-997-00	RES, ADJ, METAL GLAZE	100K
RV022	1-228-997-00	RES, ADJ, METAL GLAZE	100K
RV023	1-228-997-00	RES, ADJ, METAL GLAZE	100K

Q DET COIL

T002 1-404-545-11 COIL, Q DET
T004 1-404-545-11 COIL, Q DET
T006 1-404-544-11 COIL, Q DET
T008 1-404-544-11 COIL, Q DET

POST PIN

TP001	1-536-354-00	POST PIN
TP002	1-536-354-00	POST PIN
TP003	1-536-354-00	POST PIN
TP004	1-536-354-00	POST PIN
TP005	1-536-354-00	POST PIN
TP006	1-536-354-00	POST PIN
TP007	1-536-354-00	POST PIN
TP008	1-536-354-00	POST PIN
TP009	1-536-354-00	POST PIN
TP010	1-536-354-00	POST PIN
TP011	1-536-354-00	POST PIN
TP012	1-536-354-00	POST PIN

●:A-6713-203-A AM-5 BOARD, COMPLETE

3-684-075-01 CASE (MAIN), SHIELD, AM
 3-684-076-01 LID, UPPER, AM SHIELD CASE
 3-684-077-03 LID, BOTTOM, AM SHIELD CASE

CAPACITOR

C501	1-123-356-00	ELECT	10MF	20%	16V
C505	1-123-330-00	ELECT	22MF	20%	16V
C506	1-123-333-00	ELECT	100MF	20%	16V
C507	1-123-333-00	ELECT	100MF	20%	16V
C508	1-123-328-00	ELECT	4.7MF	20%	25V
C509	1-123-328-00	ELECT	4.7MF	20%	25V
C510	1-130-497-00	MYLAR	0.15MF	5%	50V
C511	1-130-486-51	MYLAR	0.018MF	5%	50V
C512	1-123-333-00	ELECT	100MF	20%	16V
C513	1-123-379-00	ELECT	0.47MF	20%	50V
C514	1-123-330-00	ELECT	22MF	20%	16V
C515	1-102-111-00	CERAMIC	270PF	10%	50V
C516	1-123-354-00	ELECT	3.3MF	20%	50V
C517	1-130-507-51	MYLAR	0.0018MF	10%	50V
C518	1-123-305-00	ELECT	33MF	20%	10V

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C519	1-130-516-51	MYLAR 0.01MF	10% 50V	Q512	=>8-729-245-83	TRANSISTOR 2SC2458	
C520	1-123-354-00	ELECT 3.3MF	20% 50V	Q513	=>8-729-245-83	TRANSISTOR 2SC2458	
C521	1-123-328-00	ELECT 4.7MF	20% 25V	<u>RESISTOR</u>			
C522	1-123-333-00	ELECT 100MF	20% 16V	R503	1-247-839-00	CARBON 2.2K 5%	1/6W
C524	1-127-475-00	ELECT(SOLID) 0.22MF	5% 25V	R504	1-247-863-00	CARBON 22K 5%	1/6W
C525	1-130-502-00	MYLAR 680PF	10% 50V	R505	1-247-871-00	CARBON 47K 5%	1/6W
C526	1-123-332-00	ELECT 47MF	20% 16V	R506	1-247-660-00	CARBON 82 5%	1/4W F
C527	1-130-479-00	MYLAR 0.0047MF	5% 50V	R507	1-247-847-00	CARBON 4.7K 5%	1/6W
C528	1-130-477-00	MYLAR 0.0033MF	5% 50V	R508	1-247-867-00	CARBON 33K 5%	1/6W
C529	1-129-709-00	FILM 0.0039MF	10% 630V	R509	1-247-847-00	CARBON 4.7K 5%	1/6W
C530	1-102-108-00	CERAMIC 150PF	10% 50V	R510	1-247-855-00	CARBON 10K 5%	1/6W
C531	1-123-333-00	ELECT 100MF	20% 16V	R511	1-247-867-00	CARBON 33K 5%	1/6W
C533	1-130-518-51	MYLAR 0.015MF	10% 50V	R512	1-247-819-00	CARBON 330 5%	1/6W
C534	1-123-332-00	ELECT 47MF	20% 16V	R513	1-247-855-00	CARBON 10K 5%	1/6W
C535	1-102-111-00	CERAMIC 270PF	10% 50V	R514	1-247-903-00	CARBON 1M 5%	1/6W
C536	1-123-379-00	ELECT 0.47MF	20% 50V	R515	1-247-849-00	CARBON 5.6K 5%	1/6W
C537	1-123-333-00	ELECT 100MF	20% 16V	R516	1-247-819-00	CARBON 330 5%	1/6W
C539	1-123-356-00	ELECT 10MF	20% 16V	R517	1-210-825-00	SOLID 3.3M 5%	1/4W
<u>CONNECTOR</u>				R518	1-247-851-00	CARBON 6.8K 5%	1/6W
CN501	1-560-893-00	PIN, CONNECTOR 5P		R519	1-247-859-00	CARBON 15K 5%	1/6W
CN502	1-560-893-00	PIN, CONNECTOR 5P		R520	1-247-819-00	CARBON 330 5%	1/6W
CN503	1-564-030-00	PIN, CONNECTOR 5P		R521	1-247-891-00	CARBON 330K 5%	1/6W
<u>TRIMMER</u>				R522	1-247-883-00	CARBON 150K 5%	1/6W
CT501	1-141-215-00	CAP, TRIMAR		R524	1-247-783-00	CARBON 10 5%	1/6W
<u>DIODE</u>				R526	1-247-863-00	CARBON 22K 5%	1/6W
D506	8-719-911-19	DIODE 1SS119		R528	1-247-853-00	CARBON 8.2K 5%	1/6W
D507	=>8-719-200-02	DIODE 10E2		R530	1-247-849-00	CARBON 5.6K 5%	1/6W
D508	8-719-812-31	DIODE TLR123		R531	1-247-829-00	CARBON 820 5%	1/6W
<u>IC</u>				R532	1-247-862-00	CARBON 20K 5%	1/6W
IC501	8-759-800-79	IC LA7048		R533	1-246-980-00	CARBON 3.3 5%	1/8W F
<u>COIL</u>				R534	1-247-839-00	CARBON 2.2K 5%	1/6W
L501	1-407-963-00	MICRO INDUCTOR 15MMH		R535	1-247-839-00	CARBON 2.2K 5%	1/6W
L502	1-407-508-00	MICRO INDUCTOR 22MMH		R536	1-247-849-00	CARBON 5.6K 5%	1/6W
L503	1-407-710-00	MICRO INDUCTOR 270UH		R537	1-247-855-00	CARBON 10K 5%	1/6W
L504	1-407-508-00	MICRO INDUCTOR 22MMH		R538	1-247-863-00	CARBON 22K 5%	1/6W
<u>TRANSISTOR</u>				R539	1-247-831-00	CARBON 1K 5%	1/6W
Q501	8-729-988-12	TRANSISTOR 2SA881		R540	1-247-838-00	CARBON 2K 5%	1/6W
Q502	=>8-729-245-83	TRANSISTOR 2SC2458		R541	1-247-877-00	CARBON 82K 5%	1/6W
Q504	8-729-967-32	TRANSISTOR 2SC2673		R542	1-247-865-00	CARBON 27K 5%	1/6W
Q505	8-729-663-47	TRANSISTOR 2SC945-P		R543	1-247-871-00	CARBON 47K 5%	1/6W
Q506	8-729-663-47	TRANSISTOR 2SC945-P		R545	1-247-871-00	CARBON 47K 5%	1/6W
Q507	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R546	1-247-841-00	CARBON 2.7K 5%	1/6W
Q508	=>8-729-245-83	TRANSISTOR 2SC2458		R547	1-247-863-00	CARBON 22K 5%	1/6W
Q509	=>8-729-245-83	TRANSISTOR 2SC2458		R548	1-247-843-00	CARBON 3.3K 5%	1/6W
Q510	=>8-729-245-83	TRANSISTOR 2SC2458		R550	1-247-875-00	CARBON 68K 5%	1/6W
Q511	=>8-729-245-83	TRANSISTOR 2SC2458		R551	1-247-855-00	CARBON 10K 5%	1/6W
				R552	1-247-783-00	CARBON 10 5%	1/6W
				R561	1-247-840-00	CARBON 2.4K 5%	1/6W
				R562	1-247-855-00	CARBON 10K 5%	1/6W
				R563	1-247-895-00	CARBON 470K 5%	1/6W

NOTE:

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When indicating parts by reference number, please include the board name.

AM-5**SS-28**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<u>VARIABLE RESISTOR</u>							
RV501	1-228-748-00	RES, ADJ, CARBON 10K		C331	1-123-381-00	ELECT 2.2MF	20% 50V
RV502	1-228-989-00	RES, ADJ, METAL GLAZE 470		C332	1-161-021-00	CERAMIC 0.047MF	10% 25V
RV503	1-228-751-00	RES, ADJ, CARBON 100K		C333	1-131-357-00	TANTALUM 4.7MF	20% 25V
<u>TRANSFORMER</u>				C334	1-102-106-00	CERAMIC 100PF	10% 50V
T501	1-433-237-00	TRANSFORMER, OSCILLATOR		C335	1-123-333-00	ELECT 100MF	20% 16V
<u>POST PIN</u>				C336	1-123-333-00	ELECT 100MF	20% 16V
TP510	1-536-354-00	POST PIN		C337	1-130-479-00	MYLAR 0.0047MF	5% 50V
TP513	1-536-354-00	POST PIN		C338	1-123-332-00	ELECT 47MF	20% 16V
*****				C339	1-161-021-00	CERAMIC 0.047MF	10% 25V
▲:A-6715-224-A SS-28 BOARD, COMPLETE				C340	1-123-381-00	ELECT 2.2MF	20% 50V
*****				C341	1-123-306-00	ELECT 47MF	20% 10V
<u>CAPACITOR</u>				C342	1-123-306-00	ELECT 47MF	20% 10V
C001	1-123-380-00	ELECT 1MF	20% 50V	C343	1-161-016-00	CERAMIC 0.018MF	10% 25V
C002	1-123-356-00	ELECT 10MF	20% 16V	C344	1-161-013-00	CERAMIC 0.01MF	10% 25V
C003	1-161-021-00	CERAMIC 0.047MF	10% 25V	C345	1-161-017-00	CERAMIC 0.022MF	10% 25V
C004	1-123-333-00	ELECT 100MF	20% 16V	C346	1-161-002-00	CERAMIC 0.0012MF	10% 25V
C005	1-161-013-00	CERAMIC 0.01MF	10% 25V	C347	1-161-016-00	CERAMIC 0.018MF	10% 25V
C006	1-123-305-00	ELECT 33MF	20% 10V	C348	1-161-013-00	CERAMIC 0.01MF	10% 25V
C007	1-123-328-00	ELECT 4.7MF	20% 25V	C349	1-123-354-00	ELECT 3.3MF	20% 50V
C008	1-161-021-00	CERAMIC 0.047MF	10% 25V	C350	1-127-479-00	ELECT(SOLID) 1MF	5% 25V
C009	1-161-021-00	CERAMIC 0.047MF	10% 25V	C351	1-161-019-00	CERAMIC 0.033MF	10% 25V
C301	1-123-354-00	ELECT 3.3MF	20% 50V	C352	1-123-330-00	ELECT 22MF	20% 16V
C302	1-161-021-00	CERAMIC 0.047MF	10% 25V	C353	1-161-019-00	CERAMIC 0.033MF	10% 25V
C305	1-123-354-00	ELECT 3.3MF	20% 50V	C354	1-123-328-00	ELECT 4.7MF	20% 25V
C306	1-161-021-00	CERAMIC 0.047MF	10% 25V	C355	1-161-013-00	CERAMIC 0.01MF	10% 25V
C307	1-130-482-00	MYLAR 0.0082MF	5% 50V	C356	1-123-332-00	ELECT 47MF	20% 16V
C308	1-130-516-00	MYLAR 0.01MF	10% 50V	C357	1-161-013-00	CERAMIC 0.01MF	10% 25V
C309	1-130-516-00	MYLAR 0.01MF	10% 50V	C358	1-161-013-00	CERAMIC 0.01MF	10% 25V
C310	1-161-016-00	CERAMIC 0.018MF	10% 25V	C359	1-123-328-00	ELECT 4.7MF	20% 25V
C311	1-161-016-00	CERAMIC 0.018MF	10% 25V	C360	1-123-333-00	ELECT 100MF	20% 16V
C312	1-123-330-00	ELECT 22MF	20% 16V	C361	1-161-013-00	CERAMIC 0.01MF	10% 25V
C314	1-161-016-00	CERAMIC 0.018MF	10% 25V	C362	1-130-493-00	MYLAR 0.068MF	5% 50V
C315	1-161-013-00	CERAMIC 0.01MF	10% 25V	C601	1-129-794-00	FILM 0.0033MF	5% 100V
C316	1-123-356-00	ELECT 10MF	20% 16V	C602	1-129-794-00	FILM 0.0033MF	5% 100V
C317	1-123-380-00	ELECT 1MF	20% 50V	C603	1-130-524-00	MYLAR 0.047MF	10% 50V
C318	1-102-125-00	CERAMIC 0.0047MF	10% 50V	C604	1-130-520-00	MYLAR 0.022MF	10% 50V
C319	1-161-021-00	CERAMIC 0.047MF	10% 25V	C605	1-130-524-00	MYLAR 0.047MF	10% 50V
C320	1-124-429-00	ELECT 0.68MF	20% 50V	C606	1-123-330-00	ELECT 22MF	20% 16V
C321	1-161-021-00	CERAMIC 0.047MF	10% 25V	C607	1-123-331-00	ELECT 33MF	20% 25V
C322	1-161-021-00	CERAMIC 0.047MF	10% 25V	C608	1-123-331-00	ELECT 33MF	20% 25V
C323	1-123-354-00	ELECT 3.3MF	20% 50V	C610	1-123-380-00	ELECT 1MF	20% 50V
C324	1-127-476-00	ELECT(SOLID) 0.33MF	5% 25V	C611	1-123-306-00	ELECT 47MF	20% 10V
C326	1-123-310-00	ELECT 470MF	20% 10V	C612	1-161-021-00	CERAMIC 0.047MF	10% 25V
C327	1-123-308-00	ELECT 220MF	20% 10V	C801	1-102-529-00	CERAMIC 100PF	5% 50V
C328	1-161-021-00	CERAMIC 0.047MF	10% 25V	C802	1-102-529-00	CERAMIC 100PF	5% 50V
C329	1-131-357-00	TANTALUM 4.7MF	20% 25V	C901	1-101-004-00	CERAMIC 0.01MF	50V
C330	1-123-381-00	ELECT 2.2MF	20% 50V	<u>FILTER</u>			
				CF601	1-527-822-00	OSCILLATOR, CERAMIC	
				<u>CONNECTOR</u>			
				CN001	1-560-891-00	PIN, CONNECTOR 3P	

NOTE:

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SS-28

Ref.No	Part No.	Description
CN002	1-560-891-00	PIN, CONNECTOR 3P
CN003	1-560-892-00	PIN, CONNECTOR 4P
CN004	1-560-890-00	PIN, CONNECTOR 2P
CN301	1-560-892-00	PIN, CONNECTOR 4P
CN302	1-560-892-00	PIN, CONNECTOR 4P
CN303	1-560-890-00	PIN, CONNECTOR 2P
CN304	1-560-890-00	PIN, CONNECTOR 2P
CN305	1-560-897-00	PIN, CONNECTOR 9P
CN306	1-560-895-00	PIN, CONNECTOR 7P
CN307	1-560-466-00	PIN, CONNECTOR 3P
CN308	1-560-894-00	PIN, CONNECTOR 6P
CN309	1-560-892-00	PIN, CONNECTOR 4P
CN601	1-560-895-00	PIN, CONNECTOR 7P
CN602	1-560-897-00	PIN, CONNECTOR 9P
CN603	1-560-890-00	PIN, CONNECTOR 2P
CN604	1-560-890-00	PIN, CONNECTOR 2P
CN605	1-560-890-00	PIN, CONNECTOR 2P
CN606	1-560-892-00	PIN, CONNECTOR 4P
CN607	1-560-890-00	PIN, CONNECTOR 2P
CN608	1-560-892-00	PIN, CONNECTOR 4P
CN609	1-560-893-00	PIN, CONNECTOR 5P
CN610	1-560-891-00	PIN, CONNECTOR 3P
CN611	1-560-891-00	PIN, CONNECTOR 3P
CN612	1-560-896-00	PIN, CONNECTOR 8P
CN613	1-560-895-00	PIN, CONNECTOR 7P
CN614	1-560-897-00	PIN, CONNECTOR 9P
CN615	1-560-893-00	PIN, CONNECTOR 5P

DIODE

D001	8-719-000-06	DIODE MC921
D002	8-719-911-19	DIODE 1SS119
D003	8-719-911-19	DIODE 1SS119
D004	8-719-911-19	DIODE 1SS119
D005	8-719-200-02	DIODE 10E2
D006	8-719-911-19	DIODE 1SS119
D007	8-719-911-19	DIODE 1SS119
D008	8-719-911-19	DIODE 1SS119
D009	8-719-911-19	DIODE 1SS119
D010	8-719-911-19	DIODE 1SS119
D011	8-719-911-19	DIODE 1SS119
D012	8-719-911-19	DIODE 1SS119
D303	8-719-100-57	DIODE RD10E-B2
D304	8-719-162-07	DIODE RD6.2E-B
D305	8-719-911-19	DIODE 1SS119
D306	8-719-000-04	DIODE MC911
D307	8-719-812-31	DIODE TLR123
D308	8-719-000-06	DIODE MC921
D309	8-719-911-19	DIODE 1SS119
D310	8-719-000-12	DIODE MC931
D311	8-719-000-06	DIODE MC921
D312	8-719-911-06	DIODE 1SS106
D313	8-719-911-06	DIODE 1SS106
D601	8-719-911-19	DIODE 1SS119

Ref.No	Part No.	Description	Remark
D602	8-719-000-06	DIODE MC921	
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D605	8-719-911-19	DIODE 1SS119	
D606	8-719-911-19	DIODE 1SS119	
D607	8-719-911-19	DIODE 1SS119	
D608	8-719-911-19	DIODE 1SS119	
IC			
IC001	8-759-135-80	IC UPC358C	
IC301	8-751-941-05	IC CX194B-5	
IC302	8-759-135-80	IC UPC358C	
IC303	8-759-145-58	IC UPC4558C	
IC304	8-759-132-40	IC UPC324C	
IC305	8-759-240-53	IC TC4053BP	
IC306	8-759-132-40	IC UPC324C	
IC307	8-759-240-53	IC TC4053BP	
IC601	8-759-910-55	IC MB88421-141M	
IC602	8-759-800-72	IC LA7205	
COIL			
L601	1-408-418-00	MICRO INDUCTOR 56UH	
IC LINK			
PS001A	1-532-637-11	LINK, IC (N-25 1A)	
PS002A	1-532-679-11	LINK, IC (N-15 0.6A)	
PS003A	1-532-605-11	LINK, IC (N-10 0.4A)	

TRANSISTOR

Q001	=>8-729-245-83	TRANSISTOR 2SC2458
Q002	=>8-729-204-83	TRANSISTOR 2SA1048-GR
Q003	=>8-729-245-83	TRANSISTOR 2SC2458
Q004	=>8-729-204-83	TRANSISTOR 2SA1048-GR
Q005	=>8-729-245-83	TRANSISTOR 2SC2458
Q006	=>8-729-245-83	TRANSISTOR 2SC2458
Q007	=>8-729-245-83	TRANSISTOR 2SC2458
Q008	=>8-729-245-83	TRANSISTOR 2SC2458
Q009	=>8-729-245-83	TRANSISTOR 2SC2458
Q010	=>8-729-245-83	TRANSISTOR 2SC2458
Q011	=>8-729-245-83	TRANSISTOR 2SC2458
Q012	=>8-729-245-83	TRANSISTOR 2SC2458
Q013	=>8-729-245-83	TRANSISTOR 2SC2458
Q014	=>8-729-245-83	TRANSISTOR 2SC2458
Q015	=>8-729-245-83	TRANSISTOR 2SC2458
Q016	=>8-729-245-83	TRANSISTOR 2SC2458
Q017	=>8-729-245-83	TRANSISTOR 2SC2458
Q018	=>8-729-245-83	TRANSISTOR 2SC2458
Q020	=>8-729-204-83	TRANSISTOR 2SA1048-GR
Q021	=>8-729-177-32	TRANSISTOR 2SD773
Q022	=>8-729-245-83	TRANSISTOR 2SC2458
Q023	=>8-729-245-83	TRANSISTOR 2SC2458
Q024	=>8-729-245-83	TRANSISTOR 2SC2458
Q025	=>8-729-245-83	TRANSISTOR 2SC2458

NOTE:

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q026	=>8-729-245-83	TRANSISTOR 2SC2458		Q614	8-729-900-89	TRANSISTOR DTC144ES	
Q027	=>8-729-245-83	TRANSISTOR 2SC2458		Q615	8-729-987-42	TRANSISTOR 2SA874	
Q028	8-729-374-02	TRANSISTOR 2SB740		Q616	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q029	=>8-729-177-43	TRANSISTOR 2SD774		Q617	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q030	8-729-374-02	TRANSISTOR 2SB740		Q618	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q031	=>8-729-177-43	TRANSISTOR 2SD774		Q619	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q032	=>8-729-245-83	TRANSISTOR 2SC2458		Q620	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q033	=>8-729-245-83	TRANSISTOR 2SC2458		Q621	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q034	=>8-729-245-83	TRANSISTOR 2SC2458		Q622	=>8-729-245-83	TRANSISTOR 2SC2458	
Q035	=>8-729-245-83	TRANSISTOR 2SC2458		Q623	=>8-729-245-83	TRANSISTOR 2SC2458	
Q036	=>8-729-245-83	TRANSISTOR 2SC2458		Q624	=>8-729-245-83	TRANSISTOR 2SC2458	
Q037	=>8-729-245-83	TRANSISTOR 2SC2458		Q901	=>8-729-245-83	TRANSISTOR 2SC2458	
Q038	=>8-729-204-83	TRANSISTOR 2SA1048-GR		RESISTOR			
Q301	=>8-729-177-43	TRANSISTOR 2SD774		R001	1-247-871-00	CARBON 47K 5%	1/6W
Q302	=>8-729-245-83	TRANSISTOR 2SC2458		R002	1-247-855-00	CARBON 10K 5%	1/6W
Q305	=>8-729-245-83	TRANSISTOR 2SC2458		R003	1-247-863-00	CARBON 22K 5%	1/6W
Q306	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R004	1-246-467-00	CARBON 560 5%	1/4W
Q307	=>8-729-245-83	TRANSISTOR 2SC2458		R005	1-246-470-00	CARBON 750 5%	1/4W
Q308	=>8-729-245-83	TRANSISTOR 2SC2458		R006	1-247-855-00	CARBON 10K 5%	1/6W
Q309	=>8-729-245-83	TRANSISTOR 2SC2458		R007	1-247-871-00	CARBON 47K 5%	1/6W
Q310	=>8-729-245-83	TRANSISTOR 2SC2458		R008	1-247-855-00	CARBON 10K 5%	1/6W
Q311	=>8-729-245-83	TRANSISTOR 2SC2458		R009	1-247-871-00	CARBON 47K 5%	1/6W
Q312	=>8-729-245-83	TRANSISTOR 2SC2458		R010	1-247-871-00	CARBON 47K 5%	1/6W
Q313	=>8-729-245-83	TRANSISTOR 2SC2458		R011	1-247-871-00	CARBON 47K 5%	1/6W
Q314	=>8-729-245-83	TRANSISTOR 2SC2458		R012	1-247-850-00	CARBON 6.2K 5%	1/6W
Q315	=>8-729-245-83	TRANSISTOR 2SC2458		R013	1-247-853-00	CARBON 8.2K 5%	1/6W
Q316	=>8-729-245-83	TRANSISTOR 2SC2458		R014	1-247-871-00	CARBON 47K 5%	1/6W
Q317	=>8-729-245-83	TRANSISTOR 2SC2458		R016	1-247-859-00	CARBON 15K 5%	1/6W
Q318	=>8-729-245-83	TRANSISTOR 2SC2458		R017	1-247-871-00	CARBON 47K 5%	1/6W
Q319	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R018	1-247-871-00	CARBON 47K 5%	1/6W
Q320	=>8-729-177-43	TRANSISTOR 2SD774		R019	1-247-865-00	CARBON 27K 5%	1/6W
Q321	△ 8-729-117-52	TRANSISTOR 2SA1175		R020	1-247-831-00	CARBON 1K 5%	1/6W
Q322	△ 8-729-805-13	TRANSISTOR 2SC1475-13		R021	1-247-855-00	CARBON 10K 5%	1/6W
Q323	=>8-729-245-83	TRANSISTOR 2SC2458		R022	1-247-847-00	CARBON 4.7K 5%	1/6W
Q324	=>8-729-245-83	TRANSISTOR 2SC2458		R023	1-247-871-00	CARBON 47K 5%	1/6W
Q325	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R024	1-247-871-00	CARBON 47K 5%	1/6W
Q326	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R025	1-246-469-00	CARBON 680 5%	1/4W
Q327	=>8-729-245-83	TRANSISTOR 2SC2458		R026	1-247-879-00	CARBON 100K 5%	1/6W
Q328	=>8-729-245-83	TRANSISTOR 2SC2458		R027	1-247-855-00	CARBON 10K 5%	1/6W
Q330	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R028	1-247-831-00	CARBON 1K 5%	1/6W
Q601	=>8-729-245-83	TRANSISTOR 2SC2458		R029	1-247-863-00	CARBON 22K 5%	1/6W
Q602	8-729-900-89	TRANSISTOR DTC144ES		R030	1-247-863-00	CARBON 22K 5%	1/6W
Q603	8-729-900-89	TRANSISTOR DTC144ES		R031	1-247-875-00	CARBON 68K 5%	1/6W
Q604	=>8-729-177-43	TRANSISTOR 2SD774		R032	1-247-871-00	CARBON 47K 5%	1/6W
Q605	8-729-116-42	TRANSISTOR 2SD1164		R033	△ 1-212-366-00	METAL OXIDE 3.3 5%	1W F
Q606	8-729-900-89	TRANSISTOR DTC144ES		R034	△ 1-247-819-00	CARBON 330 5%	1/6W
Q607	8-729-900-89	TRANSISTOR DTC144ES		R035	1-247-871-00	CARBON 47K 5%	1/6W
Q608	=>8-729-177-43	TRANSISTOR 2SD774		R036	1-247-871-00	CARBON 47K 5%	1/6W
Q609	8-729-116-42	TRANSISTOR 2SD1164		R037	1-247-855-00	CARBON 10K 5%	1/6W
Q610	8-729-900-89	TRANSISTOR DTC144ES		R037	1-247-855-00	CARBON 10K 5%	1/6W
Q611	=>8-729-245-83	TRANSISTOR 2SC2458		R038	1-247-863-00	CARBON 22K 5%	1/6W
Q612	=>8-729-245-83	TRANSISTOR 2SC2458		R039	1-247-863-00	CARBON 22K 5%	1/6W
Q613	=>8-729-245-83	TRANSISTOR 2SC2458					

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When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R040	1-247-859-00	CARBON	15K 5% 1/6W	R323	1-247-845-00	CARBON	3.9K 5% 1/6W
R041	1-247-855-00	CARBON	10K 5% 1/6W	R324	1-247-871-00	CARBON	47K 5% 1/6W
R042	1-247-863-00	CARBON	22K 5% 1/6W	R325	1-247-871-00	CARBON	47K 5% 1/6W
R043	1-247-865-00	CARBON	27K 5% 1/6W	R326	1-247-838-00	CARBON	2K 5% 1/6W
R044	1-247-855-00	CARBON	10K 5% 1/6W	R327	1-247-828-00	CARBON	750 5% 1/6W
R045	1-247-871-00	CARBON	47K 5% 1/6W	R328	1-247-847-00	CARBON	4.7K 5% 1/6W
R046	1-247-863-00	CARBON	22K 5% 1/6W	R329	1-247-855-00	CARBON	10K 5% 1/6W
R047	1-247-855-00	CARBON	10K 5% 1/6W	R330	1-212-360-00	METAL OXIDE	1 5% 1W F
R048	1-247-845-00	CARBON	3.9K 5% 1/6W	R331	1-212-849-00	FUSIBLE	4.7 5% 1/4W F
R049	1-247-831-00	CARBON	1K 5% 1/6W	R332	1-247-821-00	CARBON	390 5% 1/6W
R050	1-247-873-00	CARBON	56K 5% 1/6W	R333	1-212-855-00	FUSIBLE	8.2 5% 1/4W F
R051	1-247-831-00	CARBON	1K 5% 1/6W	R334	1-247-887-00	CARBON	220K 5% 1/6W
R052	1-247-869-00	CARBON	39K 5% 1/6W	R335	1-247-887-00	CARBON	220K 5% 1/6W
R053	1-247-871-00	CARBON	47K 5% 1/6W	R336	1-247-865-00	CARBON	27K 5% 1/6W
R054	1-247-855-00	CARBON	10K 5% 1/6W	R337	1-247-865-00	CARBON	27K 5% 1/6W
R055	1-247-871-00	CARBON	47K 5% 1/6W	R338	1-247-848-00	CARBON	5.1K 5% 1/6W
R056	1-247-871-00	CARBON	47K 5% 1/6W	R339	1-247-867-00	CARBON	33K 5% 1/6W
R057	1-247-855-00	CARBON	10K 5% 1/6W	R340	1-247-867-00	CARBON	33K 5% 1/6W
R058	1-247-871-00	CARBON	47K 5% 1/6W	R341	1-247-855-00	CARBON	10K 5% 1/6W
R059	1-247-871-00	CARBON	47K 5% 1/6W	R342	1-247-856-00	CARBON	11K 5% 1/6W
R060	1-247-855-00	CARBON	10K 5% 1/6W	R343	1-247-872-00	CARBON	51K 5% 1/6W
R061	1-247-863-00	CARBON	22K 5% 1/6W	R344	1-247-847-00	CARBON	4.7K 5% 1/6W
R062	1-247-863-00	CARBON	22K 5% 1/6W	R345	1-247-873-00	CARBON	56K 5% 1/6W
R063	1-244-865-00	CARBON	470 5% 1/2W	R346	1-247-900-00	CARBON	750K 5% 1/6W
R064	1-247-849-00	CARBON	5.6K 5% 1/6W	R347	1-247-837-00	CARBON	1.8K 5% 1/6W
R065	1-247-831-00	CARBON	1K 5% 1/6W	R348	1-247-855-00	CARBON	10K 5% 1/6W
R066	1-212-360-00	METAL OXIDE	1 5% 1W F	R349	1-247-871-00	CARBON	47K 5% 1/6W
R067	1-247-849-00	CARBON	5.6K 5% 1/6W	R350	1-247-825-00	CARBON	560 5% 1/6W
R068	1-247-831-00	CARBON	1K 5% 1/6W	R351	1-247-842-00	CARBON	3K 5% 1/6W
R069	1-244-865-00	CARBON	470 5% 1/2W	R352	1-247-843-00	CARBON	3.3K 5% 1/6W
R070	1-247-855-00	CARBON	10K 5% 1/6W	R353	1-212-850-00	FUSIBLE	5.1 5% 1/4W F
R071	1-247-863-00	CARBON	22K 5% 1/6W	R354	1-206-482-00	METAL OXIDE	62 5% 2W F
R072	1-247-863-00	CARBON	22K 5% 1/6W	R355	1-212-857-00	FUSIBLE	10 5% 1/4W F
R073	1-247-871-00	CARBON	47K 5% 1/6W	R356	1-247-859-00	CARBON	15K 5% 1/6W
R075	1-247-863-00	CARBON	22K 5% 1/6W	R357	1-247-823-00	CARBON	470 5% 1/6W
R076	1-247-871-00	CARBON	47K 5% 1/6W	R358	1-247-855-00	CARBON	10K 5% 1/6W
R077	1-247-821-00	CARBON	390 5% 1/6W	R359	1-247-831-00	CARBON	1K 5% 1/6W
R078	1-247-855-00	CARBON	10K 5% 1/6W	R360	1-247-903-00	CARBON	1M 5% 1/6W
R079	1-247-855-00	CARBON	10K 5% 1/6W	R361	1-247-855-00	CARBON	10K 5% 1/6W
R080	1-247-855-00	CARBON	10K 5% 1/6W	R362	1-247-831-00	CARBON	1K 5% 1/6W
R081	1-247-903-00	CARBON	1M 5% 1/6W	R363	1-247-903-00	CARBON	1M 5% 1/6W
R082	1-247-831-00	CARBON	1K 5% 1/6W	R364	1-247-871-00	CARBON	47K 5% 1/6W
R083	1-247-903-00	CARBON	1M 5% 1/6W	R365	1-247-855-00	CARBON	10K 5% 1/6W
R084	1-247-879-00	CARBON	100K 5% 1/6W	R366	1-247-871-00	CARBON	47K 5% 1/6W
R085	1-247-879-00	CARBON	100K 5% 1/6W	R367	1-247-829-00	CARBON	820 5% 1/6W
R086	1-206-640-00	METAL OXIDE	100 5% 2W F	R368	1-247-880-00	CARBON	110K 5% 1/6W
R316	1-247-871-00	CARBON	47K 5% 1/6W	R369	1-247-839-00	CARBON	2.2K 5% 1/6W
R317	1-247-863-00	CARBON	22K 5% 1/6W	R370	1-247-839-00	CARBON	2.2K 5% 1/6W
R318	1-247-863-00	CARBON	22K 5% 1/6W	R371	1-247-847-00	CARBON	4.7K 5% 1/6W
R319	1-247-871-00	CARBON	47K 5% 1/6W	R372	1-247-855-00	CARBON	10K 5% 1/6W
R320	1-247-871-00	CARBON	47K 5% 1/6W	R373	1-247-891-00	CARBON	330K 5% 1/6W
R321	1-247-859-00	CARBON	15K 5% 1/6W	R374	1-247-891-00	CARBON	330K 5% 1/6W
R322	1-247-857-00	CARBON	12K 5% 1/6W	R375	1-247-863-00	CARBON	22K 5% 1/6W

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Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description			Remark
R376	1-247-849-00	CARBON	5.6K	5%	1/6W	R430	1-247-859-00	CARBON	15K	5%	1/6W
R377	1-247-855-00	CARBON	10K	5%	1/6W	R431	1-247-871-00	CARBON	47K	5%	1/6W
R378	1-247-835-00	CARBON	1.5	5%	1/6W	R432	1-247-859-00	CARBON	15K	5%	1/6W
R379	1-247-855-00	CARBON	10KK	5%	1/6W	R433	1-247-871-00	CARBON	47K	5%	1/6W
R380	1-247-819-00	CARBON	330	5%	1/6W	R434	1-247-855-00	CARBON	10K	5%	1/6W
R381	1-247-871-00	CARBON	47K	5%	1/6W	R435	1-247-871-00	CARBON	47K	5%	1/6W
R382	1-247-879-00	CARBON	100K	5%	1/6W	R436	1-247-831-00	CARBON	1K	5%	1/6W
R383	1-247-849-00	CARBON	5.6K	5%	1/6W	R437	1-247-831-00	CARBON	1K	5%	1/6W
R384	1-247-857-00	CARBON	12K	5%	1/6W	R438	1-247-831-00	CARBON	1K	5%	1/6W
R385	1-247-855-00	CARBON	10K	5%	1/6W	R441	1-247-859-00	CARBON	15K	5%	1/6W
R386	1-247-839-00	CARBON	2.2K	5%	1/6W	R442	1-247-855-00	CARBON	10K	5%	1/6W
R387	1-247-871-00	CARBON	47K	5%	1/6W	R443	1-247-825-00	CARBON	560	5%	1/6W
R388	1-247-871-00	CARBON	47K	5%	1/6W	R444	1-247-871-00	CARBON	47K	5%	1/6W
R389	1-247-847-00	CARBON	4.7K	5%	1/6W	R601	1-247-831-00	CARBON	1K	5%	1/6W
R390	1-247-859-00	CARBON	15K	5%	1/6W	R602	1-247-871-00	CARBON	47K	5%	1/6W
R391	1-247-855-00	CARBON	10K	5%	1/6W	R603	1-247-869-00	CARBON	39K	5%	1/6W
R392	1-247-871-00	CARBON	47K	5%	1/6W	R604	1-247-862-00	CARBON	20K	5%	1/6W
R393	1-247-867-00	CARBON	33K	5%	1/6W	R605	1-247-862-00	CARBON	20K	5%	1/6W
R394	1-247-879-00	CARBON	100K	5%	1/6W	R606	1-247-873-00	CARBON	56K	5%	1/6W
R395	1-247-879-00	CARBON	100K	5%	1/6W	R607	1-247-869-00	CARBON	39K	5%	1/6W
R396	1-247-887-00	CARBON	220K	5%	1/6W	R608	1-247-829-00	CARBON	820	5%	1/6W
R397	1-247-867-00	CARBON	33K	5%	1/6W	R609	1-247-829-00	CARBON	820	5%	1/6W
R398	1-247-883-00	CARBON	150K	5%	1/6W	R610	1-247-869-00	CARBON	39K	5%	1/6W
R399	1-247-883-00	CARBON	150K	5%	1/6W	R611	1-247-829-00	CARBON	820	5%	1/6W
R400	1-247-857-00	CARBON	12K	5%	1/6W	R612	1-247-829-00	CARBON	820	5%	1/6W
R401	1-247-879-00	CARBON	100K	5%	1/6W	R613	1-247-869-00	CARBON	39K	5%	1/6W
R402	1-247-879-00	CARBON	100K	5%	1/6W	R614	1-247-869-00	CARBON	39K	5%	1/6W
R403	1-247-883-00	CARBON	150K	5%	1/6W	R615	1-247-827-00	CARBON	680	5%	1/6W
R404	1-247-855-00	CARBON	10K	5%	1/6W	R616	1-247-853-00	CARBON	8.2K	5%	1/6W
R405	1-247-867-00	CARBON	33K	5%	1/6W	R617	1-247-855-00	CARBON	10K	5%	1/6W
R406	1-247-883-00	CARBON	150K	5%	1/6W	R618	1-247-853-00	CARBON	8.2K	5%	1/6W
R407	1-247-871-00	CARBON	47K	5%	1/6W	R619	1-247-853-00	CARBON	8.2K	5%	1/6W
R408	1-247-867-00	CARBON	33K	5%	1/6W	R620	1-247-853-00	CARBON	8.2K	5%	1/6W
R409	1-247-897-00	CARBON	560K	5%	1/6W	R621	1-247-853-00	CARBON	8.2K	5%	1/6W
R410	1-247-847-00	CARBON	4.7K	5%	1/6W	R622	1-247-849-00	CARBON	5.6K	5%	1/6W
R411	1-247-871-00	CARBON	47K	5%	1/6W	R623	1-247-855-00	CARBON	10K	5%	1/6W
R412	1-247-897-00	CARBON	560K	5%	1/6W	R624	1-247-842-00	CARBON	3K	5%	1/6W
R413	1-247-867-00	CARBON	33K	5%	1/6W	R625	1-247-807-00	CARBON	100	5%	1/6W
R414	1-247-868-00	CARBON	36K	5%	1/6W	R626	1-247-873-00	CARBON	56K	5%	1/6W
R415	1-247-832-00	CARBON	1.1K	5%	1/6W	R627	1-247-863-00	CARBON	22K	5%	1/6W
R416	1-247-857-00	CARBON	12K	5%	1/6W	R628	1-247-809-00	CARBON	120	5%	1/6W
R417	1-247-866-00	CARBON	30K	5%	1/6W	R629	1-247-830-00	CARBON	910	5%	1/6W
R418	1-247-871-00	CARBON	47K	5%	1/6W	R630	1-247-863-00	CARBON	22K	5%	1/6W
R419	1-247-855-00	CARBON	10K	5%	1/6W	R631	1-247-855-00	CARBON	10K	5%	1/6W
R420	1-247-871-00	CARBON	47K	5%	1/6W	R632	1-247-839-00	CARBON	2.2K	5%	1/6W
R421	1-247-871-00	CARBON	47K	5%	1/6W	R633	1-247-839-00	CARBON	2.2K	5%	1/6W
R422	1-247-823-00	CARBON	470	5%	1/6W	R634	1-247-839-00	CARBON	2.2K	5%	1/6W
R423	1-247-847-00	CARBON	4.7K	5%	1/6W	R635	1-247-839-00	CARBON	2.2K	5%	1/6W
R424	1-212-360-00	METAL OXIDE	1	5%	1W F	R636	1-247-839-00	CARBON	2.2K	5%	1/6W
R426	1-247-871-00	CARBON	47K	5%	1/6W	R637	1-247-839-00	CARBON	2.2K	5%	1/6W
R427	1-247-855-00	CARBON	10K	5%	1/6W	R638	1-247-855-00	CARBON	10K	5%	1/6W
R428	1-247-879-00	CARBON	100K	5%	1/6W	R639	1-247-855-00	CARBON	10K	5%	1/6W
R429	1-247-871-00	CARBON	47K	5%	1/6W	R640	1-247-855-00	CARBON	10K	5%	1/6W

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

MT-4

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
♣:A-6721-201-A	TU-60 BOARD, COMPLETE	*****		C045	1-136-244-11	FILM 0.1MF	2% 50V
♣:3-662-227-00	HOLDER (R-3), LED			C046	1-123-308-00	ELECT 220MF	20% 10V
♣:3-674-390-00	HOLDER (B), LED			C047	1-136-243-11	FILM 0.047MF	2% 50V
♣:3-681-220-00	BAND, RETAINER, TUNER			C048	1-136-243-11	FILM 0.047MF	2% 50V
♣:3-681-233-00	CASE, SHIELD (MAIN), TU			C101	1-102-963-00	CERAMIC 33PF	10% 50V
♣:3-684-073-01	LID, UPPER, TU SHIELD CASE (S)			C102	1-102-963-00	CERAMIC 33PF	10% 50V
♣:3-684-074-01	LID, BOTTOM,			C103	1-123-381-00	ELECT 2.2MF	20% 50V
C001	1-102-529-00	CERAMIC 100PF	5% 50V	C104	1-161-036-00	CERAMIC 0.047MF	20% 25V
C002	1-102-527-00	CERAMIC 82PF	5% 50V	C105	1-161-271-00	CERAMIC 100PF	5% 50V
C003	1-102-949-00	CERAMIC 12PF	5% 50V	C106	1-130-495-00	MYLAR 0.1MF	5% 50V
C004	1-102-523-00	CERAMIC 56PF	5% 50V	C107	1-130-493-00	MYLAR 0.068MF	5% 50V
C005	1-161-030-00	CERAMIC 0.0047MF	20% 25V	C108	1-130-493-00	MYLAR 0.068MF	5% 50V
C006	1-161-030-00	CERAMIC 0.0047MF	20% 25V	C109	1-102-963-00	CERAMIC 33PF	10% 50V
C007	1-161-030-00	CERAMIC 0.0047MF	20% 25V	C110	1-123-356-00	ELECT 10MF	20% 16V
C008	1-161-030-00	CERAMIC 0.0047MF	20% 25V	C111	1-101-004-00	CERAMIC 0.01MF	50V
C009	1-123-380-00	ELECT 1MF	20% 50V	C112	1-123-356-00	ELECT 10MF	20% 16V
C010	1-123-356-00	ELECT 10MF	20% 16V	C201	1-101-004-00	CERAMIC 0.01MF	50V
C011	1-161-030-00	CERAMIC 0.0047MF	20% 25V	C202	1-123-332-00	ELECT 47MF	20% 16V
C012	1-161-030-00	CERAMIC 0.0047MF	20% 25V	C203	1-123-332-00	ELECT 47MF	20% 16V
C013	1-161-036-00	CERAMIC 0.047MF	20% 25V	C204	1-101-004-00	CERAMIC 0.01MF	50V
C014	1-102-529-00	CERAMIC 100PF	5% 50V	C205	1-123-356-00	ELECT 10MF	20% 16V
C015	1-123-332-00	ELECT 47MF	20% 16V	C206	1-123-380-00	ELECT 1MF	20% 50V
C016	1-101-004-00	CERAMIC 0.01MF	50V	C207	1-123-356-00	ELECT 10MF	20% 16V
C017	1-102-979-00	CERAMIC 24PF	5% 50V	C208	1-101-004-00	CERAMIC 0.01MF	50V
C018	1-161-034-00	CERAMIC 0.022MF	20% 25V	C209	1-101-004-00	CERAMIC 0.01MF	50V
C019	1-123-352-00	ELECT 1MF	20% 50V	C221	1-123-330-00	ELECT 22MF	20% 16V
C020	1-161-030-00	CERAMIC 0.0047MF	20% 25V	C301	1-123-328-00	ELECT 1MF	20% 25V
C021	1-123-286-00	ELECT 0.33MF	20% 50V	C302	1-123-328-00	ELECT 4.7MF	20% 25V
C022	1-161-032-00	CERAMIC 0.01MF	20% 25V	C303	1-123-333-00	ELECT 100MF	20% 16V
C023	1-101-361-00	CERAMIC 150PF	10% 50V	C403	1-123-332-00	ELECT 47MF	20% 16V
C024	1-123-380-00	ELECT 1MF	20% 50V	C404	1-123-328-00	ELECT 4.7MF	20% 25V
C025	1-104-077-00	POLYSTYRENE 0.001MF	5% 50V				
C026	1-161-034-00	CERAMIC 0.022MF	20% 25V				
C027	1-161-034-00	CERAMIC 0.022MF	20% 25V				
C028	1-161-034-00	CERAMIC 0.022MF	20% 25V				
C029	1-130-478-00	MYLAR 0.0039MF	5% 50V				
C030	1-130-478-00	MYLAR 0.0039MF	5% 50V				
C031	1-130-478-00	MYLAR 0.0039MF	5% 50V				
C032	1-123-380-00	ELECT 1MF	20% 50V				
C033	1-123-330-00	ELECT 22MF	20% 16V				
C034	1-123-380-00	ELECT 1MF	20% 50V				
C035	1-123-332-00	ELECT 47MF	20% 16V				
C036	1-123-332-00	ELECT 47MF	20% 16V				
C037	1-123-330-00	ELECT 22MF	20% 16V				
C038	1-123-356-00	ELECT 10MF	20% 16V				
C039	1-161-036-00	CERAMIC 0.047MF	20% 25V				
C040	1-104-089-00	POLYSTYRENE 0.0033MF	5% 50V				
C041	1-104-077-00	POLYSTYRENE 0.001MF	5% 50V				
C042	1-161-036-00	CERAMIC 0.047MF	20% 25V				
C043	1-161-034-00	CERAMIC 0.022MF	20% 25V				
C044	1-136-244-11	FILM 0.1MF	2% 50V				

FILTER

CF001	1-527-840-00	FILTER, CERAMIC
CF002	1-527-839-00	FILTER, CERAMIC
CF101	1-527-822-00	OSCILLATOR, CERAMIC

CONNECTOR

CN001	♣:1-560-893-00	PIN, CONNECTOR 5P
CN002	♣:1-560-892-00	PIN, CONNECTOR 4P
CN003	♣:1-560-892-00	PIN, CONNECTOR 4P
CN101	♣:1-560-900-00	PIN, CONNECTOR 12P
CN102	♣:1-560-892-00	PIN, CONNECTOR 4P
CN201	♣:1-560-892-00	PIN, CONNECTOR 4P

TRIMMER

CT001	1-404-134-00	TRAP, CERAMIC (5.5MHZ)
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DIODE

D001	8-719-911-19	DIODE 1SS119
D102	8-719-911-19	DIODE 1SS119
D103	8-719-812-31	DIODE TLR123

When indicating parts by reference number, please include the board name.

TU-60

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
D104	8-719-812-31	DIODE TLR123		R009	1-247-843-00	CARBON 3.3K 5%	1/6W
D105	8-719-812-31	DIODE TLR123		R010	1-247-853-00	CARBON 8.2K 5%	1/6W
D106	8-719-812-32	DIODE TLY123		R011	1-247-879-00	CARBON 100K 5%	1/6W
D107	8-719-812-33	DIODE TLG123A		R012	1-247-871-00	CARBON 47K 5%	1/6W
D201	8-719-000-12	DIODE MC931		R013	1-247-871-00	CARBON 47K 5%	1/6W
D402	8-719-911-19	DIODE 1SS119		R014	1-247-831-00	CARBON 1K 5%	1/6W
<u>IC</u>				R015	1-247-813-00	CARBON 180 5%	1/6W
IC001	8-759-909-08	IC TDA3541		R016	1-247-824-00	CARBON 510 5%	1/6W
IC002	8-759-909-54	IC TDA2546A		R017	1-247-821-00	CARBON 390 5%	1/6W
IC003	6-066-721-60	IC TDA3800AS		R018	1-247-823-00	CARBON 470 5%	1/6W
IC004	8-759-145-58	IC UPC4558C		R019	1-247-835-00	CARBON 1.5K 5%	1/6W
IC101	8-759-600-98	IC M50160-018SP		R020	1-247-829-00	CARBON 820 5%	1/6W
IC102	8-759-600-66	IC M58653P		R021	1-247-829-00	CARBON 820 5%	1/6W
IC103	8-759-600-15	IC M54570L		R022	1-247-829-00	CARBON 820 5%	1/6W
IC201	8-759-157-40	IC UPC574J		R023	1-247-847-00	CARBON 4.7K 5%	1/6W
<u>COIL</u>				R024	1-247-853-00	CARBON 8.2K 5%	1/6W
L001	1-408-592-00	MICRO INDUCTOR 1.2UH		R025	1-247-841-00	CARBON 2.7K 5%	1/6W
L002	1-408-591-00	MICRO INDUCTOR 1UH		R026	1-247-841-00	CARBON 2.7K 5%	1/6W
L003	1-408-591-00	MICRO INDUCTOR 1UH		R027	1-247-853-00	CARBON 8.2K 5%	1/6W
L004	1-408-600-00	MICRO INDUCTOR 5.6UH		R028	1-247-831-00	CARBON 1K 5%	1/6W
L005	1-408-599-00	MICRO INDUCTOR 4.7UH		R029	1-247-863-00	CARBON 22K 5%	1/6W
L006	1-408-597-00	MICRO INDUCTOR 3.3UH		R030	1-247-839-00	CARBON 2.2K 5%	1/6W
L007	1-408-591-00	MICRO INDUCTOR 1UH		R031	1-247-865-00	CARBON 27K 5%	1/6W
L008	1-408-591-00	MICRO INDUCTOR 1UH		R032	1-247-829-00	CARBON 820 5%	1/6W
<u>TRANSISTOR</u>				R033	1-215-465-00	METAL 68K 1%	1/6W
Q001	=>8-729-203-28	TRANSISTOR 2SC2216		R034	1-215-409-00	METAL 330 1%	1/6W
Q002	=>8-729-245-83	TRANSISTOR 2SC2458		R035	1-215-487-00	METAL 560K 1%	1/6W
Q003	8-729-900-74	TRANSISTOR DTC143TS		R037	1-215-462-00	METAL 51K 1%	1/6W
Q004	8-729-900-74	TRANSISTOR DTC143TS		R038	1-215-408-00	METAL 300 1%	1/6W
Q101	=>8-729-245-83	TRANSISTOR 2SC2458		R039	1-215-486-00	METAL 510K 1%	1/6W
Q102	=>8-729-245-83	TRANSISTOR 2SC2458		R041	1-246-489-00	CARBON 4.7K 5%	1/4W
Q103	8-729-900-89	TRANSISTOR DTC144ES		R101	1-246-505-00	CARBON 22K 5%	1/4W
Q201	8-729-900-89	TRANSISTOR DTC144ES		R102	1-246-505-00	CARBON 22K 5%	1/4W
Q202	8-729-103-43	TRANSISTOR 2SB734		R103	1-246-505-00	CARBON 22K 5%	1/4W
Q203	8-729-900-89	TRANSISTOR DTC144ES		R104	1-246-497-00	CARBON 10K 5%	1/4W
Q301	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R105	1-246-497-00	CARBON 10K 5%	1/4W
Q302	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R106	1-246-497-00	CARBON 10K 5%	1/4W
Q303	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R107	1-246-497-00	CARBON 10K 5%	1/4W
Q401	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R108	1-246-497-00	CARBON 10K 5%	1/4W
Q402	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R109	1-246-497-00	CARBON 10K 5%	1/4W
Q403	8-729-900-61	TRANSISTOR DTA114ES		R111	1-246-472-00	CARBON 910 5%	1/4W
<u>RESISTOR</u>				R112	1-246-472-00	CARBON 910 5%	1/4W
R001	1-247-819-00	CARBON 330 5%	1/6W	R113	1-246-505-00	CARBON 22K 5%	1/4W
R002	1-247-847-00	CARBON 4.7K 5%	1/6W	R114	1-246-505-00	CARBON 22K 5%	1/4W
R003	1-247-839-00	CARBON 2.2K 5%	1/6W	R115	1-246-505-00	CARBON 22K 5%	1/4W
R004	1-247-815-00	CARBON 220 5%	1/6W	R116	1-246-505-00	CARBON 22K 5%	1/4W
R005	1-247-813-00	CARBON 180 5%	1/6W	R117	1-246-505-00	CARBON 22K 5%	1/4W
R006	1-247-869-00	CARBON 39K 5%	1/6W	R118	1-247-891-00	CARBON 330K 5%	1/6W
				R119	1-247-839-00	CARBON 2.2K 5%	1/6W
				R120	1-246-505-00	CARBON 22K 5%	1/4W
				R121	1-247-839-00	CARBON 2.2K 5%	1/6W
				R122	1-246-477-00	CARBON 1.5K 5%	1/4W
				R123	1-246-475-00	CARBON 1.2K 5%	1/4W

When indicating parts by reference number, please include the board name.

HP-7

Ref.No	Part No.	Description	Remark
T007	1-404-378-00	I.F.T	
T008	1-404-135-00	COIL, SIF DISCRI	
T009	1-404-343-00	COIL, IF	

	♣:1-612-327-11	TR-14 BOARD	

<u>VARIABLE RESISTOR</u>			
RV701	1-228-603-00	RES, VAR, CARBON 100K	

	♣:1-609-227-11	CS-3 BOARD	

<u>CONNECTOR</u>			
CN301	♣:1-564-029-00	PIN, CONNECTOR 4P	
<u>SWITCH</u>			
S301	1-554-241-00	SWITCH, LEVER	

	♣:1-609-228-11	CS-4 BOARD	

<u>SWITCH</u>			
S302	1-554-241-00	SWITCH, LEVER	

	♣:1-610-401-00	RD-6 BOARD	

	♣:3-681-157-00	HOLDER, RD	
<u>DIODE</u>			
D001	8-719-921-03	DIODE GP-2S02A	

	♣:1-610-402-00	RD-7 BOARD	

<u>DIODE</u>			
D001	8-719-921-03	DIODE GP-2S02A	

	♣:1-612-324-11	HP-7 BOARD	

<u>JACK</u>			
JK401	1-507-833-00	JACK	

RL-18 TM-54

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
	♣:1-612-330-11	RL-18 BOARD *****					
		<u>CAPACITOR</u>				<u>TRIMMER</u>	
C801	1-123-356-00	ELECT 10MF 20% 16V		CT101	1-141-022-11	CAP, TRIMMER, CERAMIC 20PF	
C802	1-123-356-00	ELECT 10MF 20% 16V				<u>DIODE</u>	
C803	1-161-039-00	CERAMIC 0.001MF 10% 25V		D101	8-719-812-31	DIODE TLR123	
C804	1-161-039-00	CERAMIC 0.001MF 10% 25V		D102	8-719-911-19	DIODE 1SS119	
C805	1-123-356-00	ELECT 10MF 20% 16V		D103	8-719-911-19	DIODE 1SS119	
		<u>CONNECTOR</u>		D104	8-719-191-07	DIODE RD9.1E-B	
CN801♣:1-564-017-00		PIN, CONNECTOR 7P		D105	8-719-911-19	DIODE 1SS119	
CN802♣:1-564-022-00		PIN, CONNECTOR 12P		D106	8-719-911-19	DIODE 1SS119	
CN803♣:1-564-017-00		PIN, CONNECTOR 7P		D107	8-719-911-19	DIODE 1SS119	
		<u>DIODE</u>				<u>IC</u>	
D801	8-719-911-19	DIODE 1SS119		IC101	8-759-101-97	IC UPD7519G-053	
D802	8-719-911-19	DIODE 1SS119				<u>TRANSISTOR</u>	
		<u>IC</u>		Q101 =>8-729-245-83		TRANSISTOR 2SC2458	
IC801	8-759-135-80	IC UPC358C		Q102 =>8-729-245-83		TRANSISTOR 2SC2458	
		<u>RESISTOR</u>		Q103 =>8-729-204-83		TRANSISTOR 2SA1048-GR	
R801	1-247-855-00	CARBON 10K 5% 1/6W		Q104 =>8-729-245-83		TRANSISTOR 2SC2458	
R802	1-247-855-00	CARBON 10K 5% 1/6W				<u>RESISTOR</u>	
R803	1-247-852-00	CARBON 7.5K 5% 1/6W		R101	1-247-875-00	CARBON 68K 5% 1/6W	
R804	1-247-852-00	CARBON 7.5K 5% 1/6W		R102	1-247-879-00	CARBON 100K 5% 1/6W	
R805	1-247-878-00	CARBON 91K 5% 1/6W		R103	1-247-855-00	CARBON 10K 5% 1/6W	
R806	1-247-878-00	CARBON 91K 5% 1/6W		R104	1-247-855-00	CARBON 10K 5% 1/6W	
R807	1-247-861-00	CARBON 18K 5% 1/6W		R105	1-247-855-00	CARBON 10K 5% 1/6W	
R808	1-247-861-00	CARBON 18K 5% 1/6W		R106	1-247-855-00	CARBON 10K 5% 1/6W	
R809	1-244-853-00	CARBON 150 5% 1/2W		R107	1-247-855-00	CARBON 10K 5% 1/6W	
*****				R108	1-247-855-00	CARBON 10K 5% 1/6W	
	♣:A-6728-995-A	TM-54 BOARD, COMPLETE *****		R109	1-247-855-00	CARBON 10K 5% 1/6W	
		<u>CAPACITOR</u>		R110	1-247-855-00	CARBON 10K 5% 1/6W	
C101	1-123-354-00	ELECT 3.3MF 20% 50V		R111	1-247-855-00	CARBON 10K 5% 1/6W	
C102	1-161-772-11	CERAMIC 0.1MF 10% 25V		R112	1-247-867-00	CARBON 33K 5% 1/6W	
C103	1-161-061-00	CERAMIC 0.068MF 10% 50V		R113	1-247-872-00	CARBON 51K 5% 1/6W	
C104	1-161-772-11	CERAMIC 0.1MF 10% 25V		R114	1-247-886-00	CARBON 200K 5% 1/6W	
C105	1-125-299-00	***** 47000MF 5V		R115	1-247-903-00	CARBON 1M 5% 1/6W	
C106	1-123-357-00	ELECT 22MF 20% 50V		R116	1-247-868-00	CARBON 36K 5% 1/6W	
C107	1-102-959-00	CERAMIC 22PF 5% 50V		R117	1-247-874-00	CARBON 62K 5% 1/6W	
C108	1-123-669-51	ELECT 33MF 20% 16V		R118	1-247-869-00	CARBON 39K 5% 1/6W	
C109	1-161-024-00	CERAMIC 0.082MF 10% 25V		R119	1-247-879-00	CARBON 100K 5% 1/6W	
		<u>CONNECTOR</u>		R120	1-247-855-00	CARBON 10K 5% 1/6W	
CN102♣:1-564-002-00		PIN, CONNECTOR 3P		R121	1-247-867-00	CARBON 33K 5% 1/6W	
CN104♣:1-564-006-11		PIN, CONNECTOR 7P		R122	1-247-863-00	CARBON 22K 5% 1/6W	
CN106♣:1-564-027-00		PIN, CONNECTOR 2P		R123	1-247-831-00	CARBON 1K 5% 1/6W	
				R124	1-247-843-00	CARBON 3.3K 5% 1/6W	
				R125	1-247-879-00	CARBON 100K 5% 1/6W	
				R126	1-247-879-00	CARBON 100K 5% 1/6W	
				R127	1-247-879-00	CARBON 100K 5% 1/6W	
				R128	1-247-879-00	CARBON 100K 5% 1/6W	
				R129	1-247-804-00	CARBON 75 5% 1/6W	

When indicating parts by reference number, please include the board name.

TM-54**TM-55****SV-12****SW-31****N****LM-8**

Ref.No	Part No.	Description	Remark
<u>CRYSTAL</u>			
X101	1-527-647-00	OSCILLATOR, CRYSTAL	

	♣:A-6728-996-A	TM-55 BOARD, COMPLETE	

	♣:3-684-005-01	HOLDER (S), LED	
	♣:3-684-030-01	HOLDER, INDICATION TUBE	
	7-685-134-21	SCREW +P 2.6X8 TYPE2 SLIT	
<u>DIODE</u>			
D201	8-719-812-31	DIODE TLR123	
D202	8-719-812-31	DIODE TLR123	
D203	8-719-812-31	DIODE TLR123	
D204	8-719-812-31	DIODE TLR123	
<u>FILTER</u>			
FL201	1-519-315-11	INDICATOR TUBE, FLUORESCENT	
<u>RESISTOR</u>			
R201	1-247-815-00	CARBON 220 5% 1/6W	
R202	1-247-815-00	CARBON 220 5% 1/6W	
<u>SWITCH</u>			
S201	1-553-997-00	SWITCH, KEY BOARD	
S202	1-553-997-00	SWITCH, KEY BOARD	
S203	1-553-997-00	SWITCH, KEY BOARD	
S204	1-553-997-00	SWITCH, KEY BOARD	
S205	1-553-997-00	SWITCH, KEY BOARD	
S206	1-553-997-00	SWITCH, KEY BOARD	
S207	1-553-997-00	SWITCH, KEY BOARD	
S208	1-553-997-00	SWITCH, KEY BOARD	
S209	1-553-997-00	SWITCH, KEY BOARD	
S210	1-553-997-00	SWITCH, KEY BOARD	
S211	1-553-997-00	SWITCH, KEY BOARD	
S212	1-553-997-00	SWITCH, KEY BOARD	
S213	1-553-997-00	SWITCH, KEY BOARD	
S214	1-553-997-00	SWITCH, KEY BOARD	
S215	1-554-375-00	SWITCH, PUSH	

	♣:1-612-325-11	SV-12 BOARD	

<u>SLIDE RES VAR</u>			
RV501	1-230-414-11	RES, VAR, SLIDE 20K/20K	

NOTE:

The components identified by shading and mark ♣ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	♣:1-612-326-11	SW-31 BOARD	

<u>DIODE</u>			
D601	8-719-911-19	DIODE 1SS119	
<u>SWITCH</u>			
S601	1-553-754-00	SWITCH, SLIDE	
S602	1-553-716-00	SWITCH, SLIDE	
S603	1-553-716-00	SWITCH, SLIDE	
S604	1-553-716-00	SWITCH, SLIDE	
S605	1-553-716-00	SWITCH, SLIDE	
S606	1-553-716-00	SWITCH, SLIDE	
<u>RESISTOR</u>			
R601	1-247-807-00	CARBON 100 5% 1/6W	

	♣:1-606-794-00	N BOARD	

<u>CAPACITOR</u>			
C001	1-123-617-00	ELECT 10MF 20% 16V	
C002	1-123-617-00	ELECT 10MF 20% 16V	
C003	1-123-617-00	ELECT 10MF 20% 16V	
C004	1-161-019-00	CERAMIC 0.033MF 10% 25V	
C005	1-106-184-00	MYLAR 0.0033MF 5% 50V	
C006	1-123-821-00	ELECT 47MF 20% 16V	
<u>DIODE</u>			
D001	8-719-110-32	DIODE PH302B	
<u>IC</u>			
IC001	8-759-113-73	IC UPC1373H	
<u>COIL</u>			
L001	1-404-310-00	COIL	

	♣:1-605-071-00	LM-8 BOARD	

<u>CAPACITOR</u>			
C101	1-161-057-00	CERAMIC 0.033MF 10% 50V	
C102	1-161-057-00	CERAMIC 0.033MF 10% 50V	
<u>COIL</u>			
L101	1-408-120-00	MICRO INDUCTOR 18UH	
L102	1-408-120-00	MICRO INDUCTOR 18UH	
<u>RESISTOR</u>			
R101	♣:1-206-640-00	METAL OXIDE 100 5% 2W F	

POWER BLOCK

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
	<u>Δ</u> 1-413-171-11	POWER BLOCK (SR-19E) ***** M BOARD *****		<u>Δ</u> D630 =>8-719-101-04	DIODE RD33E-B2		
		<u>CAPACITOR</u>		D631 =>8-719-911-19	DIODE 1SS119		
C601	<u>Δ</u> 1-110-085-00	MYLAR 0.22MF 250V		D632 =>8-719-911-19	DIODE 1SS119		
C602	<u>Δ</u> 1-161-742-00	CERAMIC 2200PF 400V		D633 =>8-719-911-19	DIODE 1SS119		
C603	<u>Δ</u> 1-161-742-00	CERAMIC 2200PF 400V		D634 =>8-719-911-19	DIODE 1SS119		
C604	<u>Δ</u> 1-161-742-00	CERAMIC 2200PF 400V		D635 =>8-719-911-19	DIODE 1SS119		
C605	<u>Δ</u> 1-161-742-00	CERAMIC 2200PF 400V		D636 =>8-719-911-19	DIODE 1SS119		
C606	<u>Δ</u> 1-110-085-00	MYLAR 0.22MF 250V		D637 =>8-719-911-19	DIODE 1SS119		
C607	1-161-743-00	CERAMIC 4700PF 400V		D638 8-719-100-37	DIODE RD6.2E-BI		
C608	1-161-743-00	CERAMIC 4700PF 400V		D639 =>8-719-911-19	DIODE 1SS119		
C609	1-125-311-00	ELECT 220MF 400V		D640 8-719-100-38	DIODE RD6.2E-B2		
C610	1-124-023-00	ELECT 4.7MF 350V		<u>Δ</u> D641 =>8-719-900-95	DIODE V09G		
C611	1-124-023-00	ELECT 4.7MF 350V		<u>Δ</u> D642 =>8-719-911-19	DIODE 1SS119		
C612	1-124-162-00	ELECT 47MF 10V			<u>FUSE</u>		
C613	1-124-162-00	ELECT 47MF 10V		F601 <u>Δ</u> 1-532-237-11	FUSE, Time-Lag 3.15AT 250V		
C621	1-108-413-00	MYLAR 2200PF 200V			<u>FERRITE CORE</u>		
C622	1-108-413-00	MYLAR 2200PF 200V		FB621 1-543-060-11	FERRITE CORE		
C623	1-161-910-00	CERAMIC 390PF 500V		FB622 1-543-060-11	FERRITE CORE		
C624	1-161-910-00	CERAMIC 390PF 500V		FB623 1-543-060-11	FERRITE CORE		
C625	1-161-915-00	CERAMIC 1000PF 500V		FB624 1-543-060-11	FERRITE CORE		
C626	1-130-516-00	MYLAR 0.01MF 50V			<u>IC</u>		
C627	1-130-520-00	MYLAR 0.022MF 50V		IC621 8-759-937-59	IC MB3759		
C628	1-124-344-00	ELECT 22MF 100V			<u>COIL</u>		
C629	1-108-377-00	MYLAR 0.01MF 100V		L601 <u>Δ</u> 1-421-481-21	LFT		
C630	1-123-974-00	ELECT 2200MF 16V		L621 1-410-054-11	CHOKE, COIL		
C631	1-124-127-00	ELECT 100MF 25V		L622 1-421-421-21	CHOKE, COIL		
C632	1-130-027-00	FILM 5600PF 50V		L623 1-459-215-31	CHOKE, COIL		
C633	1-130-508-00	MYLAR 2200PF 50V		L624 1-408-933-11	CHOKE, COIL		
C634	1-130-522-00	MYLAR 0.033MF 50V			<u>TRANSISTOR</u>		
C635	1-123-318-00	ELECT 33MF 16V		<u>Δ</u> Q601 =>8-729-133-55	TRANSISTOR 2SC2335-L2		
C636	1-123-330-00	ELECT 22MF 25V		<u>Δ</u> Q602 =>8-729-133-55	TRANSISTOR 2SC2335-L2		
C637	1-123-323-00	ELECT 470MF 16V		Q603 8-729-102-03	TRANSISTOR 2SD1020-H		
C638	1-123-324-00	ELECT 1000MF 16V		Q604 8-729-102-03	TRANSISTOR 2SD1020-H		
C639	1-123-323-00	ELECT 470MF 16V		Q621 8-729-306-72	TRANSISTOR 2SD667A-C		
C640	1-123-332-00	ELECT 47MF 25V		Q622 =>8-729-245-83	TRANSISTOR 2SC2458-GR		
C641	1-123-333-00	ELECT 100MF 25V		Q623 =>8-729-245-83	TRANSISTOR 2SC2458-GR		
C642	1-123-333-00	ELECT 100MF 25V		Q624 =>8-729-204-82	TRANSISTOR 2SA1048-GR		
C643	1-123-357-00	ELECT 22MF 50V		Q625 8-729-177-32	TRANSISTOR 2SD773-3		
C644	1-123-357-00	ELECT 22MF 50V		Q626 8-729-188-23	TRANSISTOR 2SD882-P		
	<u>DIODE</u>			Q627 8-729-188-23	TRANSISTOR 2SD882-P		
D601	<u>Δ</u> 8-719-300-63	DIODE LB156		Q628 =>8-729-245-83	TRANSISTOR 2SC2458-GR		
D621	8-719-908-00	DIODE ESAC33-02CS					
D622	=>8-719-900-95	DIODE V09G					
D623	=>8-719-815-85	DIODE 1S1585					
D624	8-719-100-61	DIODE RD11E-B2					
D625	=>8-719-911-19	DIODE 1SS119					
D626	=>8-719-100-23	DIODE RD4.3E-B2					
D627	=>8-719-100-23	DIODE RD4.3E-B2					
D628	=>8-719-200-02	DIODE 10-E2					
D629	8-719-100-67	DIODE RD13E-BI					

NOTE:

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

POWER BLOCK

Ref.No.	Part No.	Description	Remark
<u>RESISTOR</u>			
R601	△ 1-214-947-00	METAL-FILM	2.7M 1/2W F
R602	△ 1-217-292-00	WIRE-WOUND	3.3 5W F
R603	1-246-528-00	CARBON	200K 1/4W
R604	1-246-528-00	CARBON	200K 1/4W
R605	1-246-528-00	CARBON	200K 1/4W
R606	1-246-528-00	CARBON	200K 1/4W
R607	△ 1-212-946-00	FUSE	3.3 1/2W F
R608	△ 1-212-946-00	FUSE	3.3 1/2W F
R609	1-246-449-00	CARBON	100 1/4W
R610	1-246-449-00	CARBON	100 1/4W
R621	△ 1-206-475-00	METAL-OXIDE	33 2W F
R622	1-535-363-00	SHUNT	0.02 2W
R623	1-246-485-00	CARBON	3.3K 1/4W
R624	1-246-473-00	CARBON	1.0K 1/4W
R626	△ 1-213-151-00	METAL-OXIDE	4.7K 1W F
R627	1-246-503-00	CARBON	18K 1/4W
R628	1-246-509-00	CARBON	33K 1/4W
R629	1-246-417-00	CARBON	4.7 1/4W
R630	1-246-453-00	CARBON	150 1/4W
R631	1-246-485-00	CARBON	3.3K 1/4W
R632	1-246-473-00	CARBON	1.0K 1/4W
R633	1-246-481-00	CARBON	2.2K 1/4W
R634	1-246-491-00	CARBON	5.6K 1/4W
R635	1-246-483-00	CARBON	2.7K 1/4W
R636	1-246-478-00	CARBON	1.6K 1/4W
R637	1-246-503-00	CARBON	18K 1/4W
R638	1-246-509-00	CARBON	33K 1/4W
R639	1-246-467-00	CARBON	560 1/4W
R640	1-246-501-00	CARBON	15K 1/4W
R641	1-246-489-00	CARBON	4.7K 1/4W
R642	1-246-489-00	CARBON	4.7K 1/4W
R643	1-246-483-00	CARBON	2.7K 1/4W
R644	1-246-485-00	CARBON	3.3K 1/4W
R645	1-246-476-00	CARBON	1.3K 1/4W
R646	1-246-497-00	CARBON	10K 1/4W
R647	1-246-489-00	CARBON	4.7K 1/4W
R648	△ 1-206-475-00	METAL-OXIDE	33 2W F
R649	1-246-471-00	CARBON	820 1/4W
R650	△ 1-205-697-00	CEMENT	15 5W F
R651	1-246-471-00	CARBON	820 1/4W
R652	△ 1-247-983-00	CARBON	1.8 1/2W F
R653	△ 1-247-960-00	CARBON	270 1/2W F
R654	1-246-475-00	CARBON	1.2K 1/4W
R655	1-246-483-00	CARBON	2.7K 1/4W
<u>VARIABLE RESISTER</u>			
RV621	1-228-989-11	RES, ADJ, METAL	470
RV622	1-228-991-11	RES, ADJ, METAL	2.2K
<u>RELAY</u>			
RY621	1-515-462-21	RELAY	

Ref.No.	Part No.	Description	Remark
<u>TRANSFORMER</u>			
T601	△ 1-447-677-11	TRANSFORMER, CONVERTOR	
T602	△ 1-437-102-12	TRANSFORMER, DRIVE	
D BOARD *****			
<u>CAPACITOR</u>			
C1	1-136-024-00	FILM	3600PF 50V
C2	1-102-112-00	CERAMIC	330PF 50V
C3	1-124-127-00	ELECT	100MF 25V
C4	1-130-528-00	MYLAR	0.1MF 50V
C5	1-124-511-00	ELECT	22MF 50V
C6	1-124-511-00	ELECT	22MF 50V
C7	1-123-875-00	ELECT	10MF 50V
<u>DIODE</u>			
D1	=>8-719-815-85	DIODE 1S1585	
D2	=>8-719-815-85	DIODE 1S1585	
D3	=>8-719-815-85	DIODE 1S1585	
<u>IC</u>			
IC1	8-759-937-59	IC MB3759	
<u>COIL</u>			
L1	1-421-550-11	COIL	
L2	1-408-421-31	COIL	
L3	1-408-421-31	COIL	
L4	1-408-421-31	COIL	
L5	1-408-427-31	COIL	
<u>RESISTOR</u>			
R1	1-246-483-00	CARBON	2.7K 1/4W
R2	1-246-501-00	CARBON	15K 1/4W
R3	1-246-433-00	CARBON	22 1/4W
R4	1-246-511-00	CARBON	39K 1/4W
R5	1-246-529-00	CARBON	220K 1/4W
<u>TRANSFORMER</u>			
T1	1-447-765-11	TRANSFORMER	

NOTE:

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
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MISCELLANEOUS

	A.1-413-171-11	SWITCHING REGULATOR (SR-19E)	
	A.1-464-270-12	BOOSTER, RF MODULATOR(RFU-808)	
	1-520-470-11	METER UNIT, LEVEL	
	A.1-534-817-31	CORD POWER	
	1-556-934-00	CABLE, PIN	
	8-825-508-10	HEAD, FE	
L901	1-464-286-00	SENSOR, S COIL	
L902	1-464-250-00	SENSOR, T COIL	
M902	8-838-048-01	MOTOR, DC (BHF-1908A)	
M904	X-3679-268-1	MOTOR ASSY, L	
PM901	A.1-454-348-31	SOLENOID, BRAKE PLUNGER	
PM902	A.1-454-365-21	SOLENOID, PLUNGER (PINCH)	
S601	A.1-552-903-12	SWITCH, PUSH POWER	
S901	1-554-374-00	SWITCH, LEVER (REC PROOF)	
S902	1-554-374-00	SWITCH, LEVER (CASSETTE DOWN)	
S903	1-553-539-00	SWITCH, MICRO (LOADING END)	
S904	1-553-718-00	SWITCH, MICRO (UNLOADING END)	

ACCESSORIES AND PACKING MATERIALS

Part No.	Description	Remark
A-6765-427-A	COMMANDER ASSY	
1-551-513-00	CABLE, COAXIAL ASSY	
1-556-893-00	CORD ASSY, COAXIAL	
3-656-301-00	SCREWDRIVER, CONTROL	
3-677-503-00	SHEET, PROTECTION	
3-681-091-01	INDIVIDUAL CARTON	
3-681-287-01	LID, ACCESSORY CASE	
3-683-463-01	CASE, ACCESSORY	
3-684-089-01	CUSHION (UPPER)	
3-684-090-01	CUSHION (LOWER)	
3-701-630-00	BAG, POLYETHYLENE	
3-773-799-41	MANUAL, INSTRUCTION	
3-773-799-71	MANUAL, INSTRUCTION	
7-632-658-01	FILM	

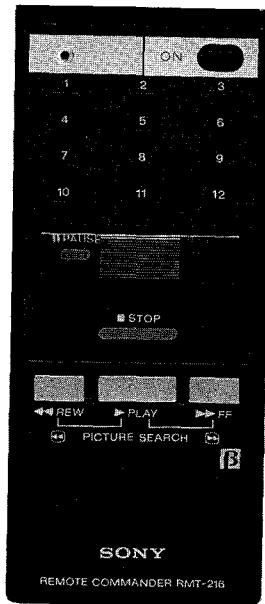
NOTE:

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

RMT-216

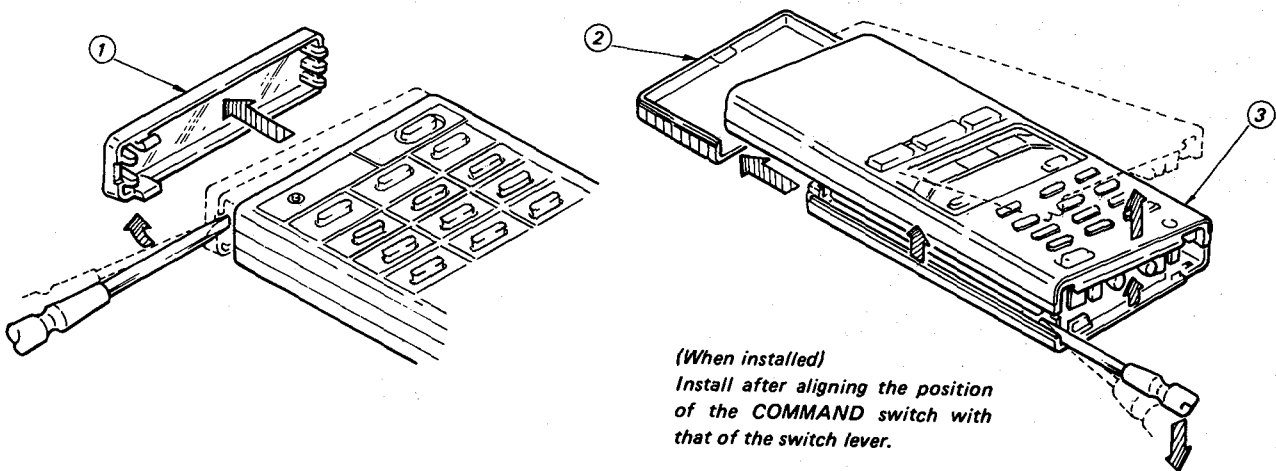
SERVICE MANUAL



SPECIFICATIONS

Remote control system	Infrared control
Power requirements	3V dc, 2 IEC designation R6 batteries (size AA)
Dimensions	Approx. 65 × 20 × 153 mm (w/h/d) (2 ⁵ / ₈ × 1 ³ / ₁₆ × 6 ¹ / ₈ inches)
Weight	incl. projecting parts and controls Approx. 140 g (5 oz) incl. batteries

DISASSEMBLY



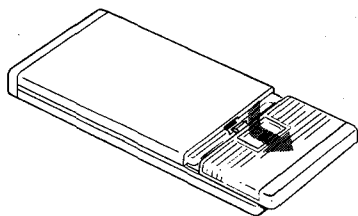
REMOTE COMMANDER
SONY®

1. REMOTE CONTROL OPERATION

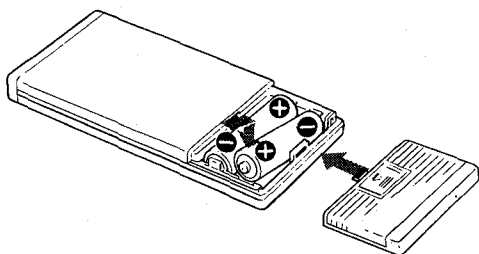
You can control almost all the functions of this video cassette recorder from your armchair using the supplied Remote Commander.

BATTERY INSERTION

- 1 Open the lid.



- 2 Insert two IEC designation R6 batteries with correct polarity.



- 3 Close the lid firmly.

Battery life

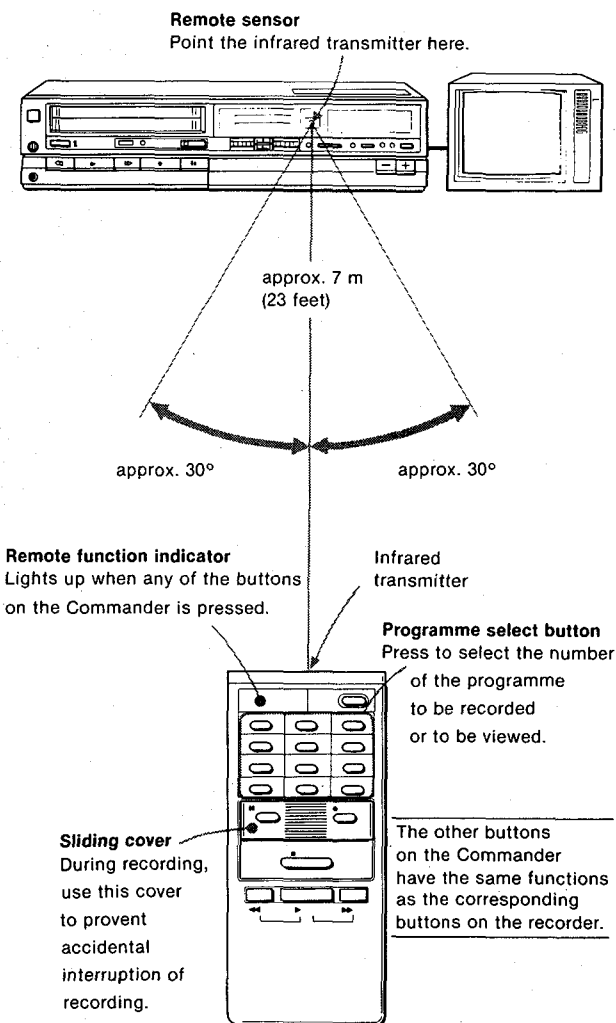
In normal operation, batteries will last for about six months. If the range of the Remote Commander becomes noticeably short, replace the batteries with new ones. When the batteries are exhausted, the remote function indicator will not light when the buttons on the Commander are pressed.

If the Commander is not to be used for a long period of time, remove the batteries to avoid possible damage from battery leakage.

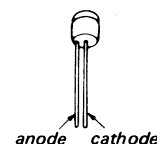
Notes

- There should be no obstacles between the Commander and the REMOTE SENSOR of the recorder.
- The shorter the distance between the Commander and the recorder, the wider the angle within which the recorder can be controlled.

OPERATION



1	2	3	4	5	6	7	8
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- When indicating parts by reference number, please include the board name.

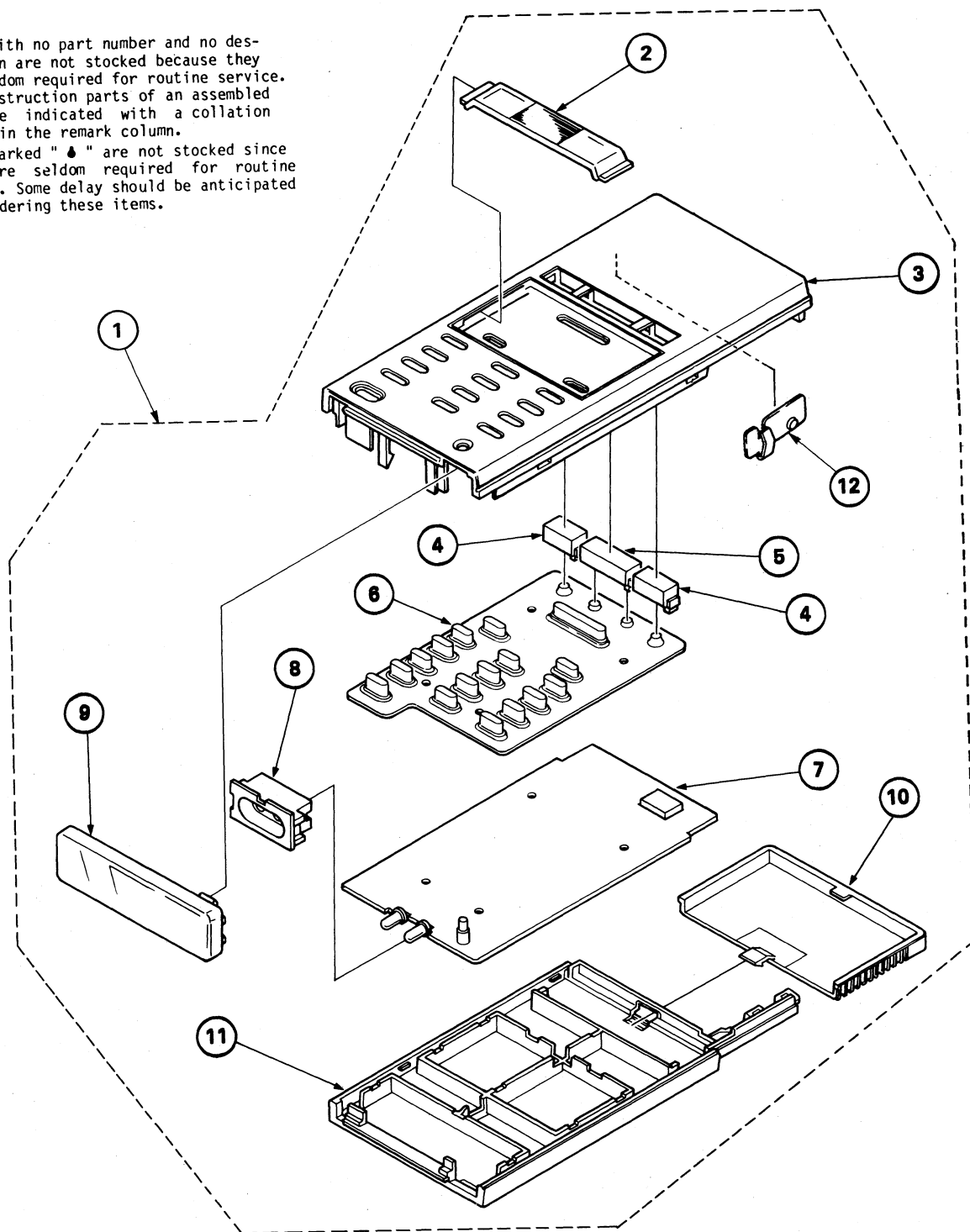
— Conductor Side —

The schematic diagram illustrates the internal wiring of a cassette deck control panel. It features a grid of 16 push-button switches labeled S1 through S16, arranged in four rows and four columns. The switches are labeled with numbers 1 through 16. The top row includes a power switch S12 labeled 'ON' and a recording switch S6 labeled 'REC'. The second row includes a stop switch S35 labeled 'STOP'. The third row includes a pause switch S5 labeled 'PAUSE'. The bottom row includes a fast forward switch S32 labeled 'REW' and a play switch S36 labeled 'PLAY'. The diagram also shows a battery pack (BATTERY) connected to a switch Q1, a resistor R4, and a capacitor C1. A 9V battery (X1) is connected to a switch Q2. The diagram is labeled 'I-610-257' at the bottom.

4. EXPLODED VIEW

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



No.	Part No.	Description
1	A-6765-427-A	COMMANDER ASSY (RMT-216)
2	2-290-603-00	CURSOR
3	X-2290-638-1	CASE ASSY, UPPER (BLACK)
4	2-290-633-00	PUSH BUTTON (M)
5	2-290-632-00	PUSH BUTTON (L)
6	2-374-636-00	RUBBER (L), CONTACT

Remark	No.	Part No.	Description
2-12	7	▲1-610-257-00	PC BOARD, IR-13
	8	2-298-402-00	MIRROR
12	9	2-290-608-00	PLATE, FROSTED
	10	2-290-606-11	COVER, BATTERY
	11	2-290-611-11	CASE, LOWER
	12	4-350-925-00	TERMINAL (C), BATTERY

Remark

5. ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

• =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

• Items marked " **A** " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS
• MF : μ F, PF : μ μ F

RESISTORS
• All resistors are in ohms
• F : nonflammable

COILS
• MMH : mH, UH : μ H

Ref.No	Part No.	Description	Remark
	A :1-610-257-00	IR-13 BOARD *****	
	2-290-601-00	TERMINAL (A), BATTERY	
	2-290-602-00	TERMINAL (B), BATTERY	
<u>CAPACITOR</u>			
C1	1-102-108-00	CERAMIC 150PF 10% 50V	
C2	1-102-108-00	CERAMIC 150PF 10% 50V	
<u>DIODE</u>			
D1	8-719-901-44	DIODE SLP144B	
D2	8-719-193-03	DIODE SE303AX	
D3	8-719-193-03	DIODE SE303AX	
<u>IC</u>			
IC1	8-759-600-07	IC M50119P	
<u>TRANSISTOR</u>			
Q1	8-729-378-84	TRANSISTOR 2SD788-4	
<u>RESISTOR</u>			
R1	1-247-797-00	CARBON 39 5% 1/6W	
R2	1-247-771-00	CARBON 3.3 5% 1/6W	
R3	1-247-771-00	CARBON 3.3 5% 1/6W	
R4	1-247-825-00	CARBON 560 5% 1/6W	
<u>CRYSTAL</u>			
X1	1-527-476-00	OSCILLATOR, CERAMIC	

When indicating parts by reference number, please include the board name.

SL-HF100EC

RMT-219

SONY[®] SERVICE MANUAL

EC Model
July, 1984

V 1418

SUPPLEMENT-1

Subject: Silver Cabinet Model is now available

- This supplement contains only the points which differ from SL-HF100EC (Black).
- File this supplement with the service manual.



Consumer
VIDEO

EXPLODED VIEWS

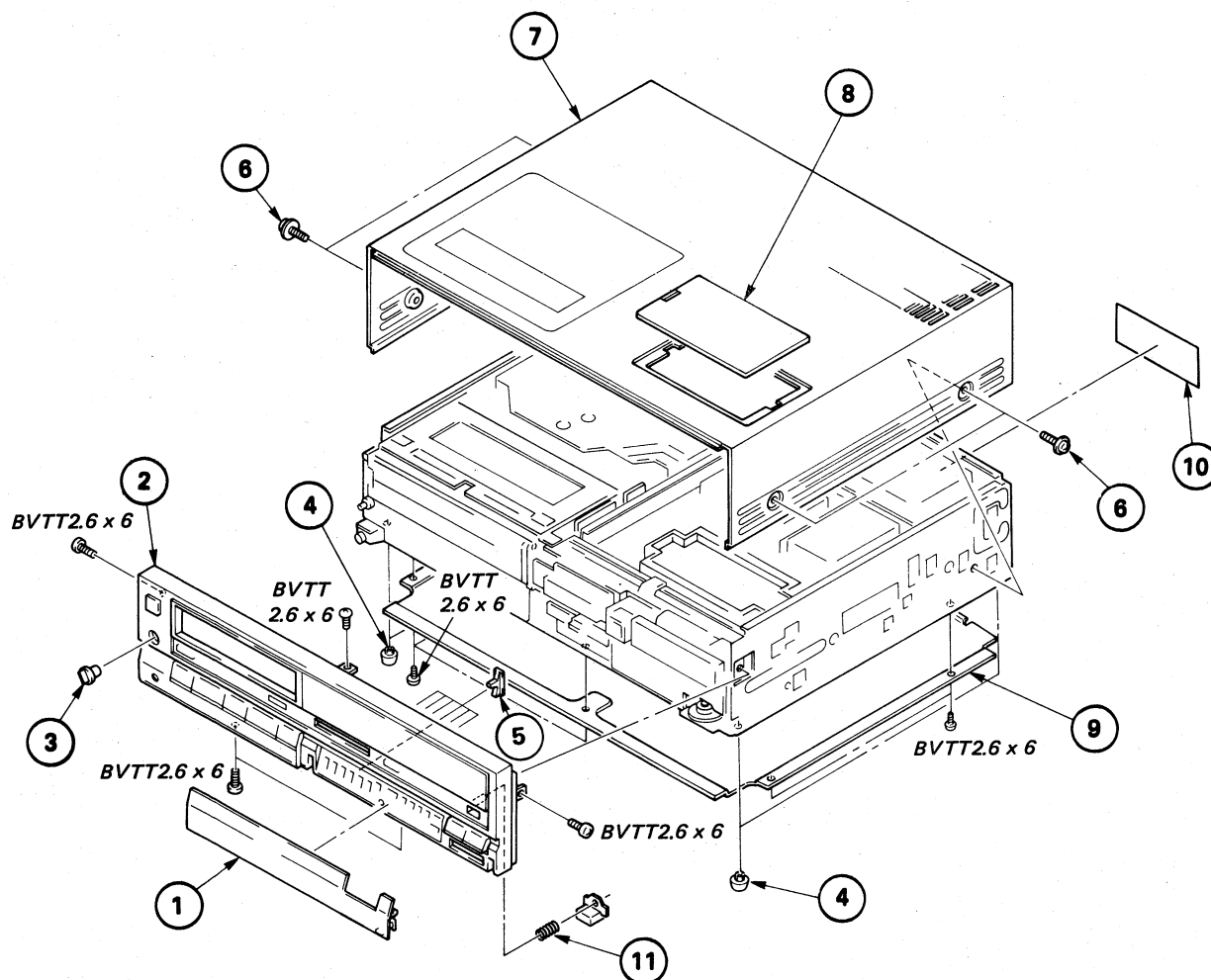
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

FRONT PANEL AND CABINET ASSEMBLY



No.	Part No.	Description	Remark
1	X-3684-027-1	DOOR ASSY, FRONT	
2	X-3684-028-1	PANEL ASSY, FRONT	
3	3-684-013-11	KNOB, CONTROL	
4	3-670-155-11	LEG	
5	3-684-035-01	BUTTON, SLIDE	
6	3-703-354-11	SCREW (OS), CASE, CLAW	

No.	Part No.	Description	Remark
7	X-3684-023-1	CASE ASSY, UPPER	
8	3-681-218-00	DOOR, PRESET	
9	▲3-684-056-01	PLATE, BOTTOM	
10	▲3-684-069-01	LABEL, MODEL NUMBER	
11	4-864-435-00	SPRING, COMPRESSION	

ACCESSORIE AND PACKING MATERIAL

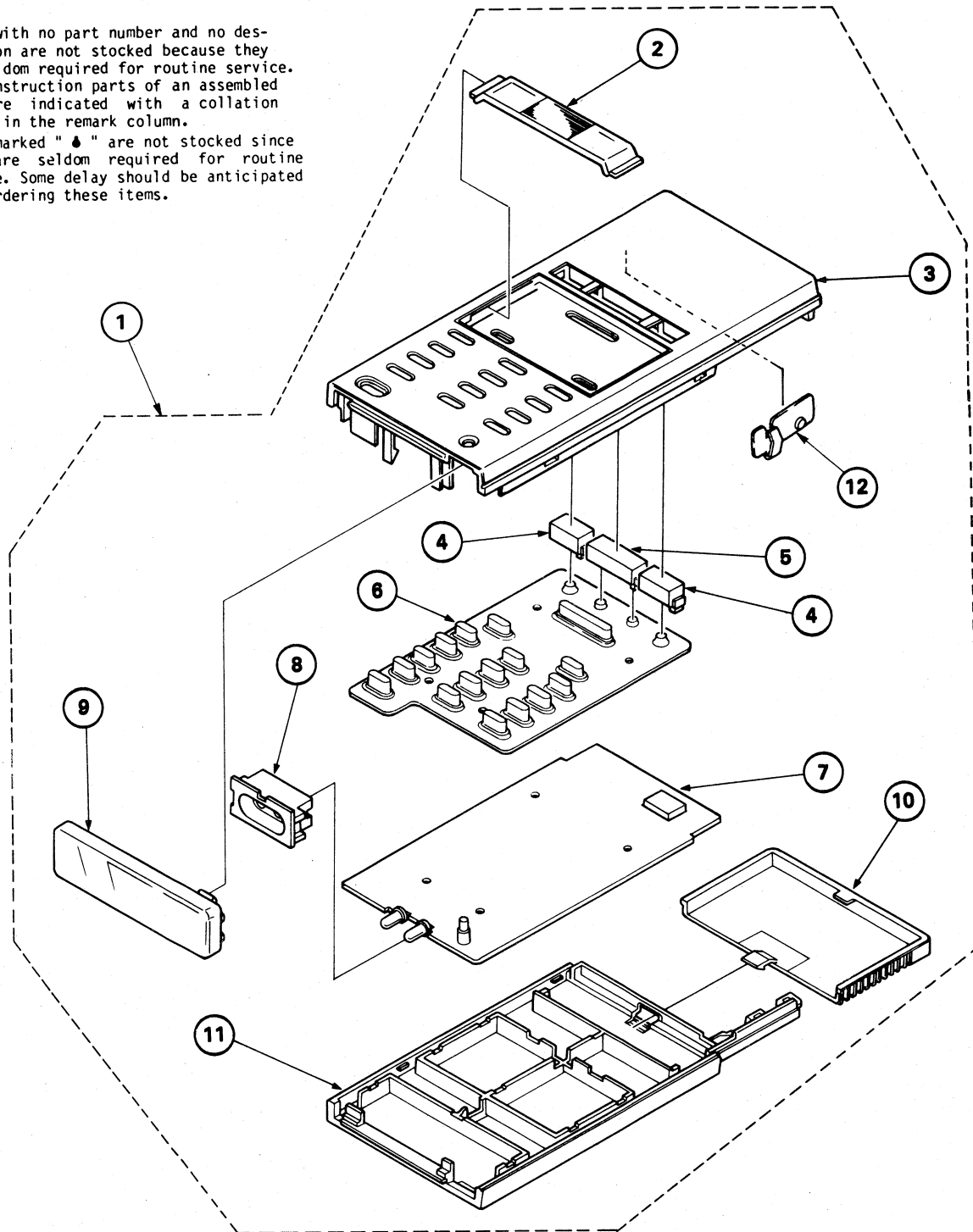
Part No.	Description	Remark
3-684-096-11	INDIVIDUAL CARTON	

RMT-219

EXPLODED VIEW

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	A-6765-274-A	COMMANDER ASSY (RMT-219)(SILVER)	2-12	7	▲1-610-257-00	IR-13 BOARD	
2	2-290-603-00	CURSOR		8	2-298-402-00	MIRROR	
3	X-2290-621-0	CASING ASSY (SILVER)	12	9	2-290-608-00	PLATE, FROSTED	
4	2-290-633-31	PUSH BUTTON (M)		10	2-290-606-00	COVER, BATTERY	
5	2-290-632-31	PUSH BUTTON (L)		11	2-290-611-00	CASE, LOWER	
6	2-374-636-00	RUBBER (L), CONTACT		12	4-350-925-00	TERMINAL (C), BATTERY	

SUPPLEMENT-2

Subject:

This supplement updates the service manual to include the revised schematic diagrams, printed wiring boards and electrical parts list for the video, servo system control, audio and tuner timer section as follows. File this supplement with the service manual.

Correction:

There are some incorrect portions on the service manual.
Please correct the overall block diagram, AFM level diagram.
There are mistakes in the method of adjustment (Supplement-1).
Please correct.

[Details of the Change]

1. Video Section

- RP-17 Board**
 - The pattern has been changed.
 - The end of part No. has been also changed from -11 to -12.
- YC-28 Board**
 - The parts mounted on the conductor side have been mounted on the component side.
 - Q15 has been changed to a digital transistor (transistor with resistors).
 - The end of part No. has been also changed from -11 to -12.

2. Servo System Control Section

- SS-28 Board**
 - Q017, Q023, Q307, Q308, Q310, Q317 have been changed to digital transistor (transistor with resistor).

3. Audio Section

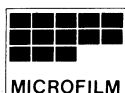
- AF-3 Board**
 - The end of part No. has been changed to -13.
DM-10 board has been mounted on AF-3 board.
Q018 has been deleted. (See page 25.)
 - The end of part No. has been changed to -14 or -15. (See page 33.)
Q013, Q016, Q711, Q712, Q713, Q714 and Q715 have been deleted.
Q715, Q728, Q729, IC021 and IC022 have been added.
IC020 has been changed from MB88201-152G to MB88201-167G.
- AM-5 Board**
 - D508 has been changed from TLR123 to RD3.3E-B1.

4. Tuner Timer Section

- TU-60 Board**
 - D402, Q301, Q302, Q303, Q401, Q402 and Q403 have been deleted.
 - IC101 has been changed from M50160-018SP to M50160-019SP.
 - IC003 has been changed from TDA3800AS to TDA3800GS.
 - Q404 has been added.
- TM-54 Board**
 - IC101 has been changed from μ PD7519G-053 to μ PD7519G-132.

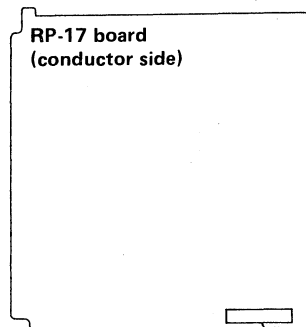
In addition to the above items, the values of resistors and capacitors have been changed.

— Continued on next page —



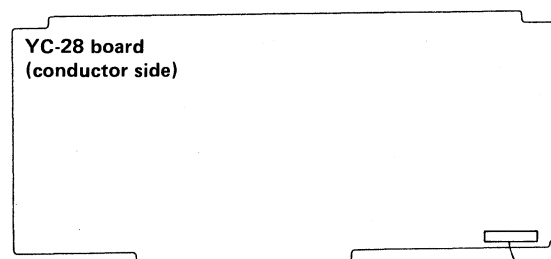
The part No. of the circuit board is indicated on the board as shown below.

RP-17 Board



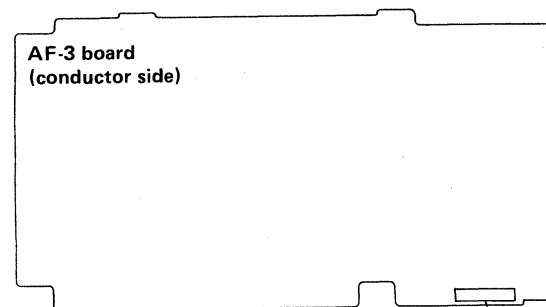
1-612-340-12

YC-28 Board



1-612-339-12

AF-3 Board

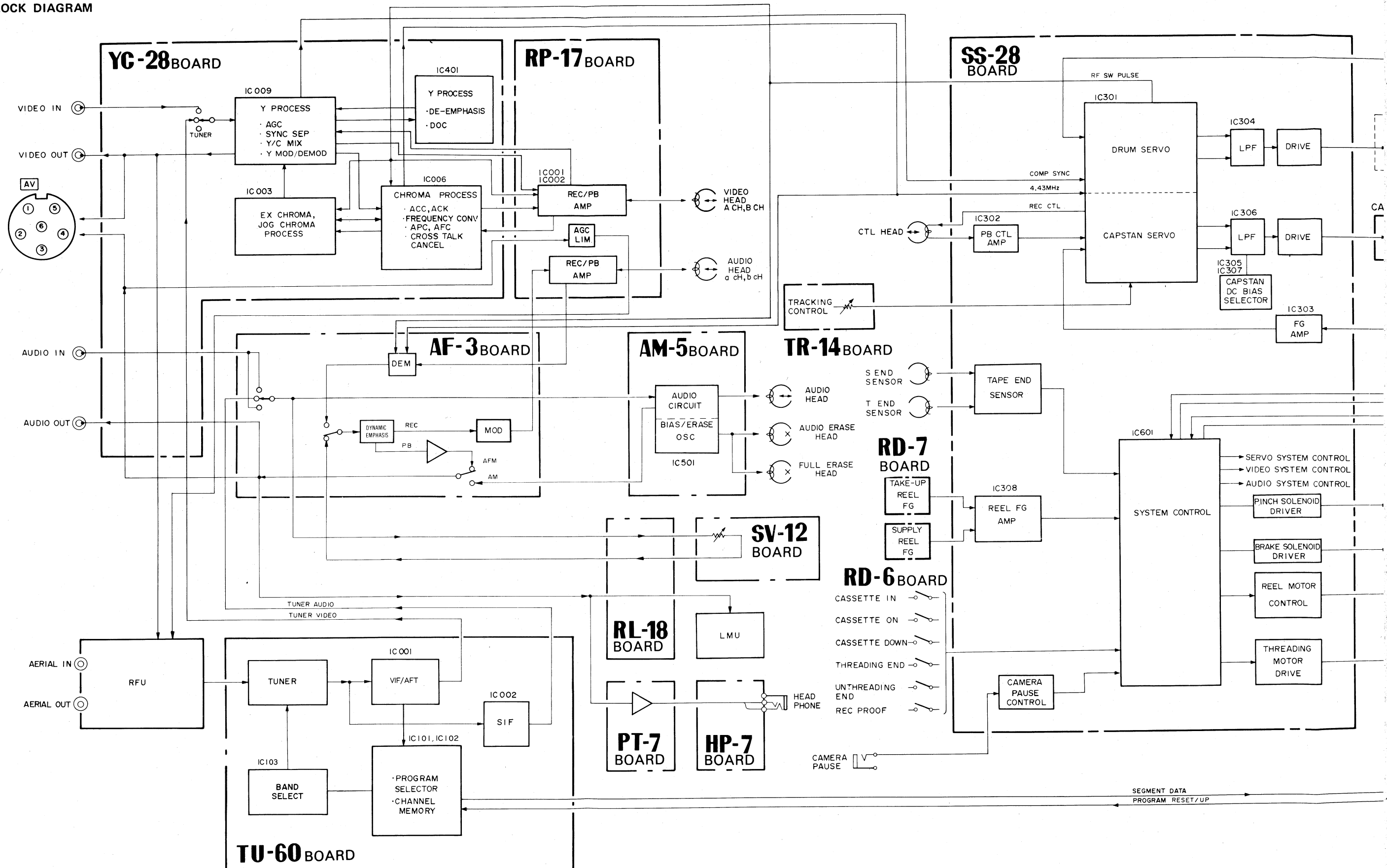


1-612-337-14 or -15

CORRECTION

DIAGRAMS

OVERALL BLOCK DIAGRAM



SCHEMATIC DIAGRAM AND PRINTED WIRING BOARDS

VIDEO VIDEO

RP-17 (LOW-CONVERTED CHROMA, Y-FM & AFM SIGNALS, RECORD/PLAYBACK AMP), YC-28 (Y & CHROMA SIGNALS RECORD/PLAYBACK PROCESS) SCHEMATIC DIAGRAM

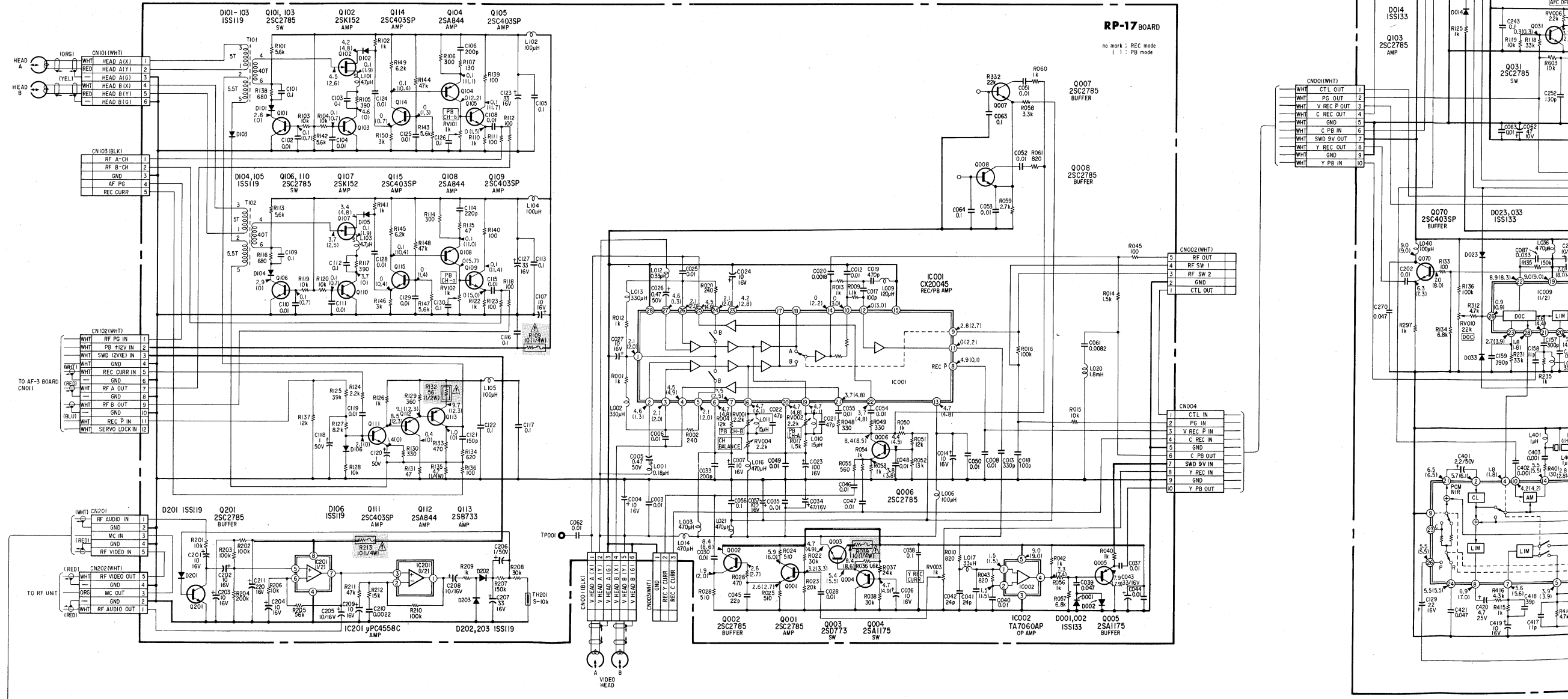
Ref. No. RP-17 BOARD : 2000 series, YC-28 BOARD : 1000 series -

Note:

- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
-  : Nonflammable resistor
-  : Fusible resistor
-  : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10M Ω).

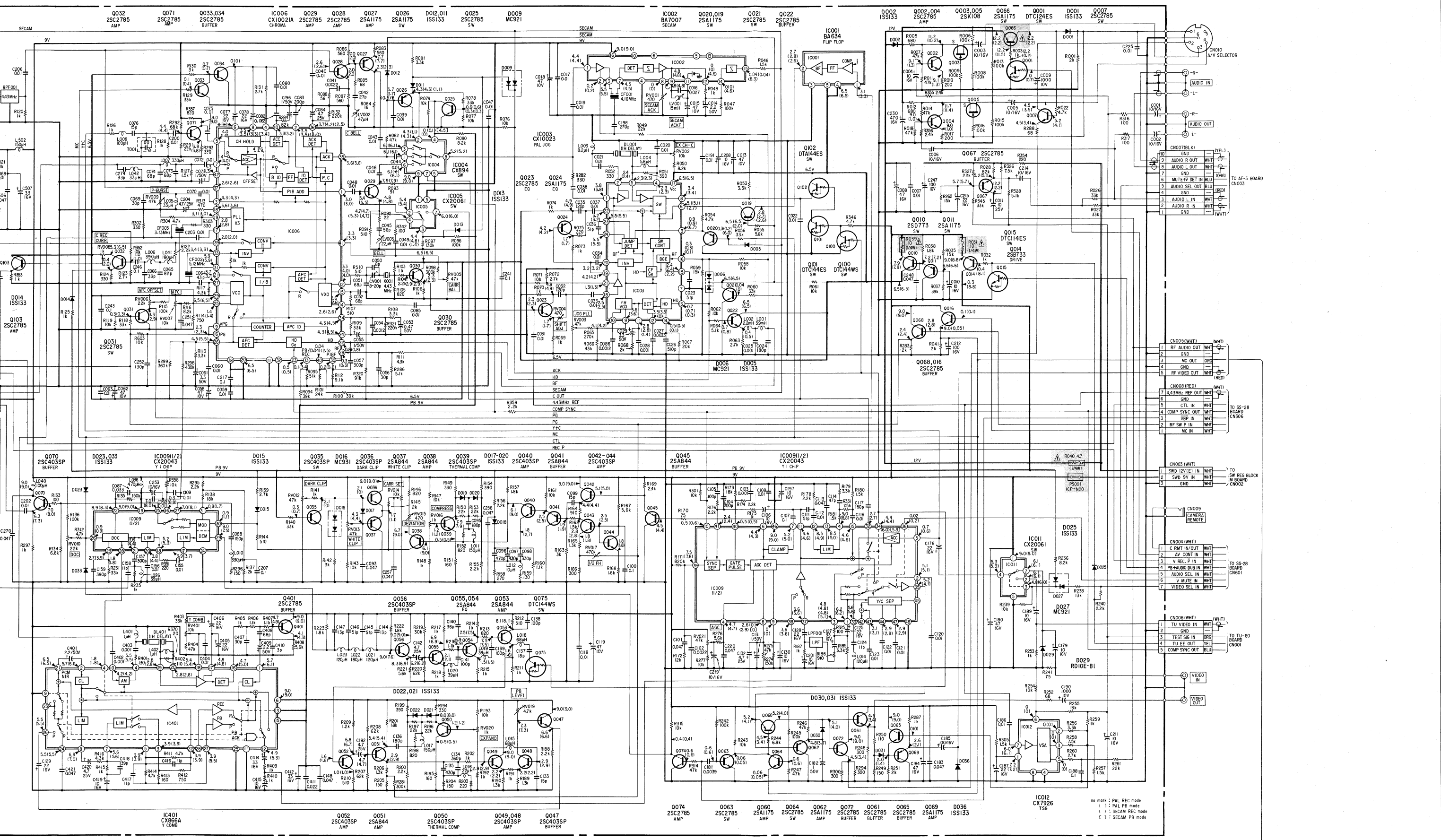
Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.



VIDEO VIDEO

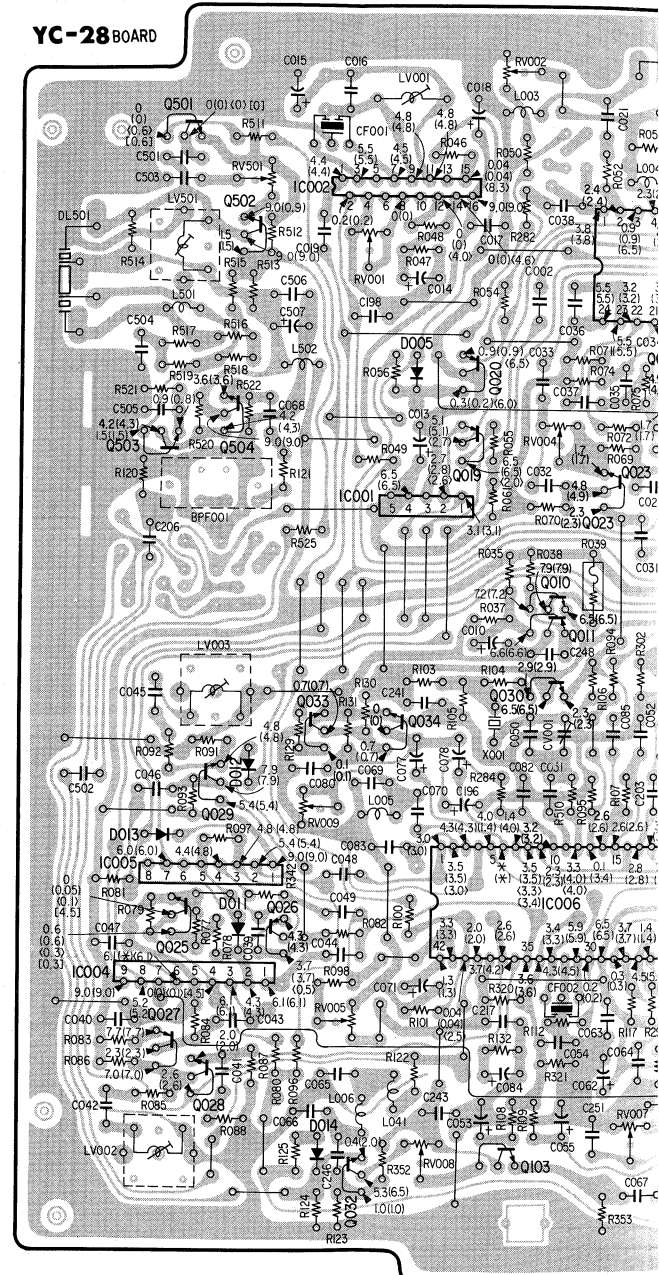
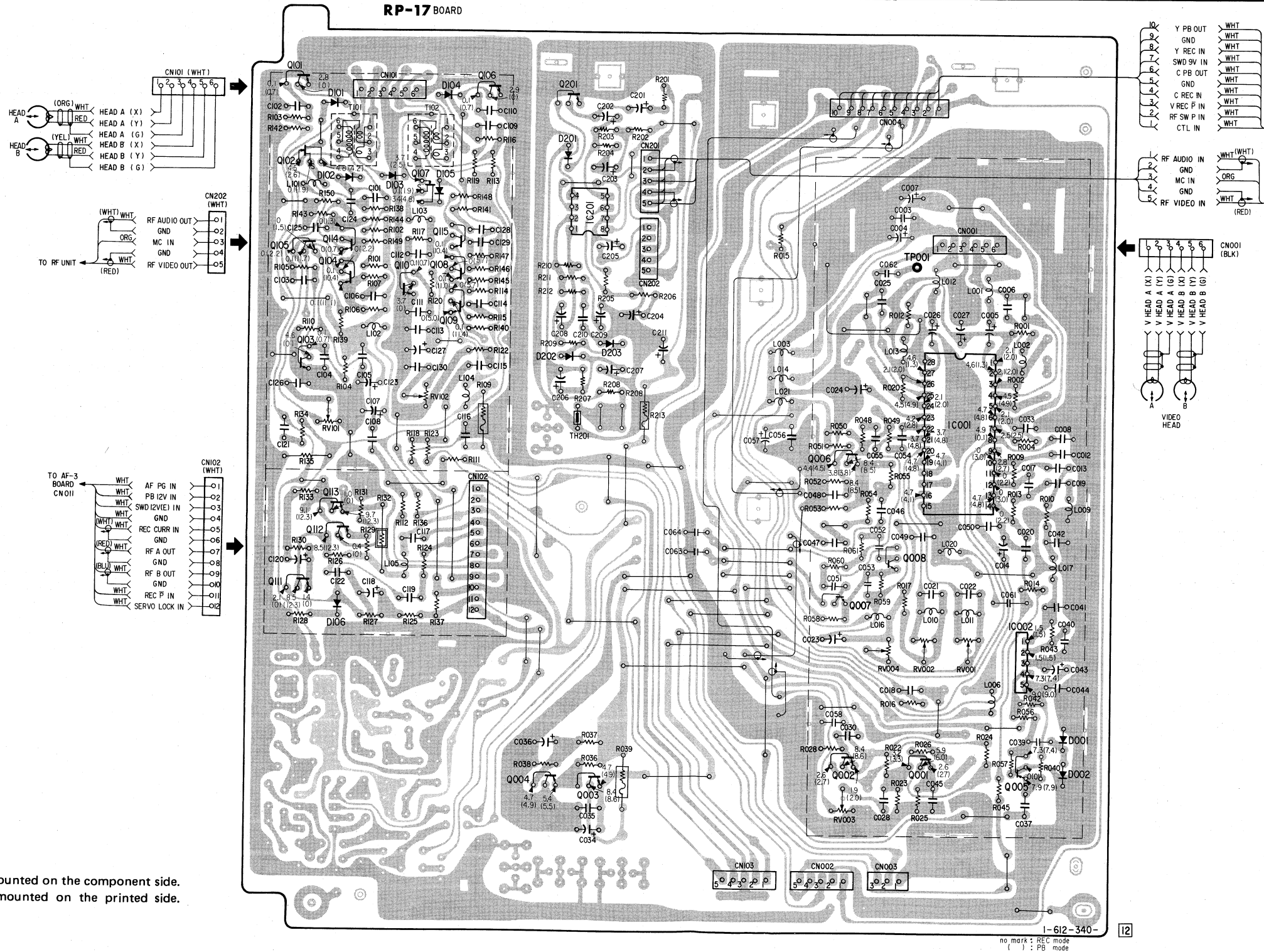
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31



VIDEO VIDEO

RP-17 (LOW-CONVERTED CHROMA, Y-FM & AFM SIGNALS, RECORD/PLAYBACK AMP), YC-28 (Y & CHROMA SIGNALS RECORD/PLAYBACK PROCESS) PRINTED WIRING BOARDS

Q, IC	101 102 105 103 111	114 104 113 112	107 110	115 108 109	106	201 IC201	006	IC001	IC002 005	501, 502, 503, 504	IC002 IC001	020 019	010 011 030	023 IC006
D	101 102 106	103	104 105	201 202, 203	004 003	002	001	001	002	IC005, 025 IC004 027, 028	029 026	033, 034	032	103
ADJ TP	RV101	RV102	TP001	RV004	RV002	RV001	RV003	RV005	RV007	RV001	RV003	RV005	RV008	RV002 RV004 RV001

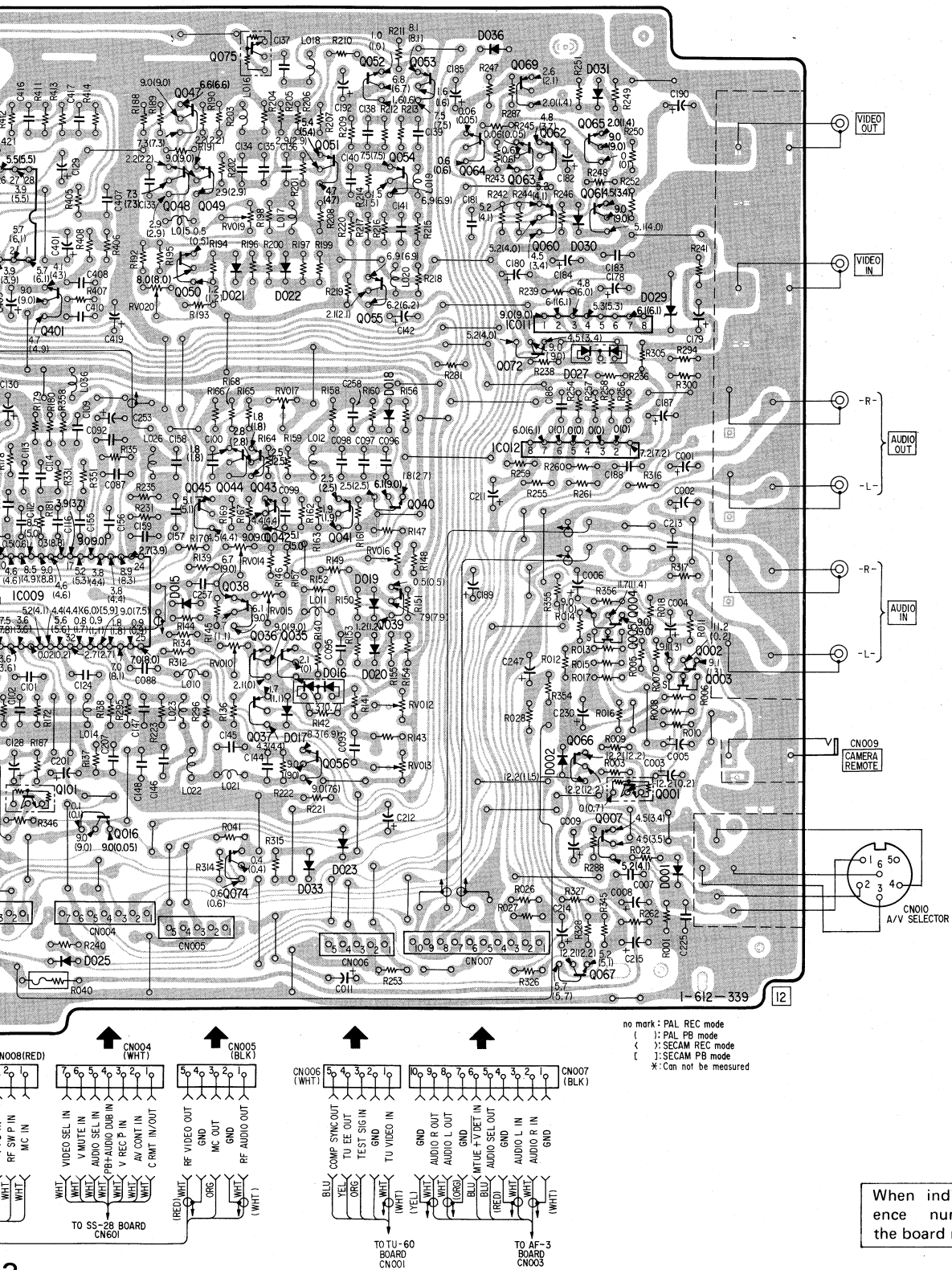


Note:

- ○ — : indicates a lead wire mounted on the component side.
- ● — : indicates a lead wire mounted on the printed side.
- ■ : soldering side
- ■ : B+ pattern

A
B
C
D
E
F
G
H
I
J

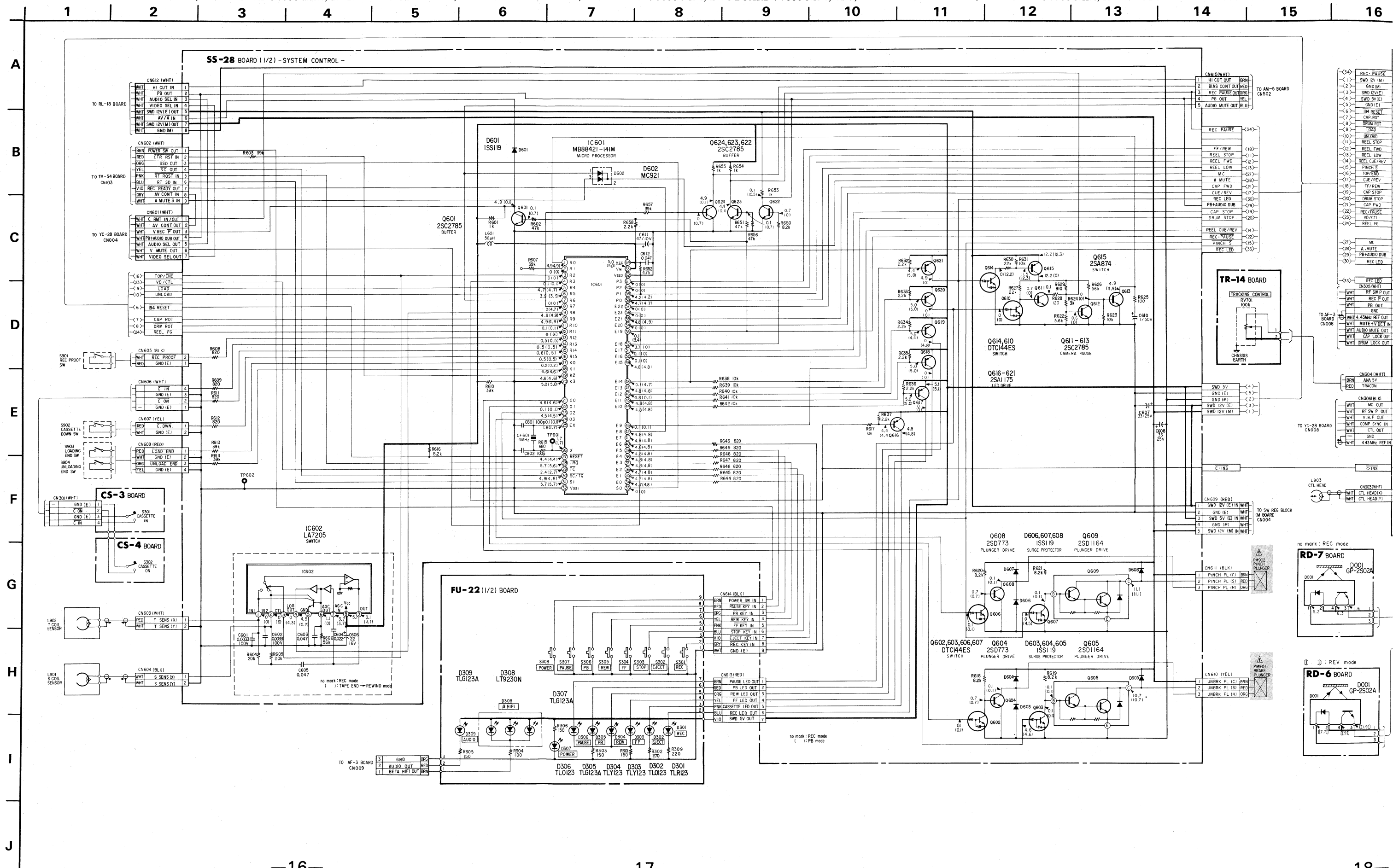
401 IC009	047,048,049,050,075 045 042	051 041	052 055	054 040	053 064	069 063,062	065 060,061	IC011 IC012	Q, IC
101	016	074	035,036,037,038 056	039		072	001 004 066 002 067 005 007 003		
	015	021	022 017	016 033, 023	018 019 020	036	031 030 027	029	D
025		RV020	RV019 RV014 RV010	RV017 RV015	RV016 RV012 RV013		001		ADJ TP

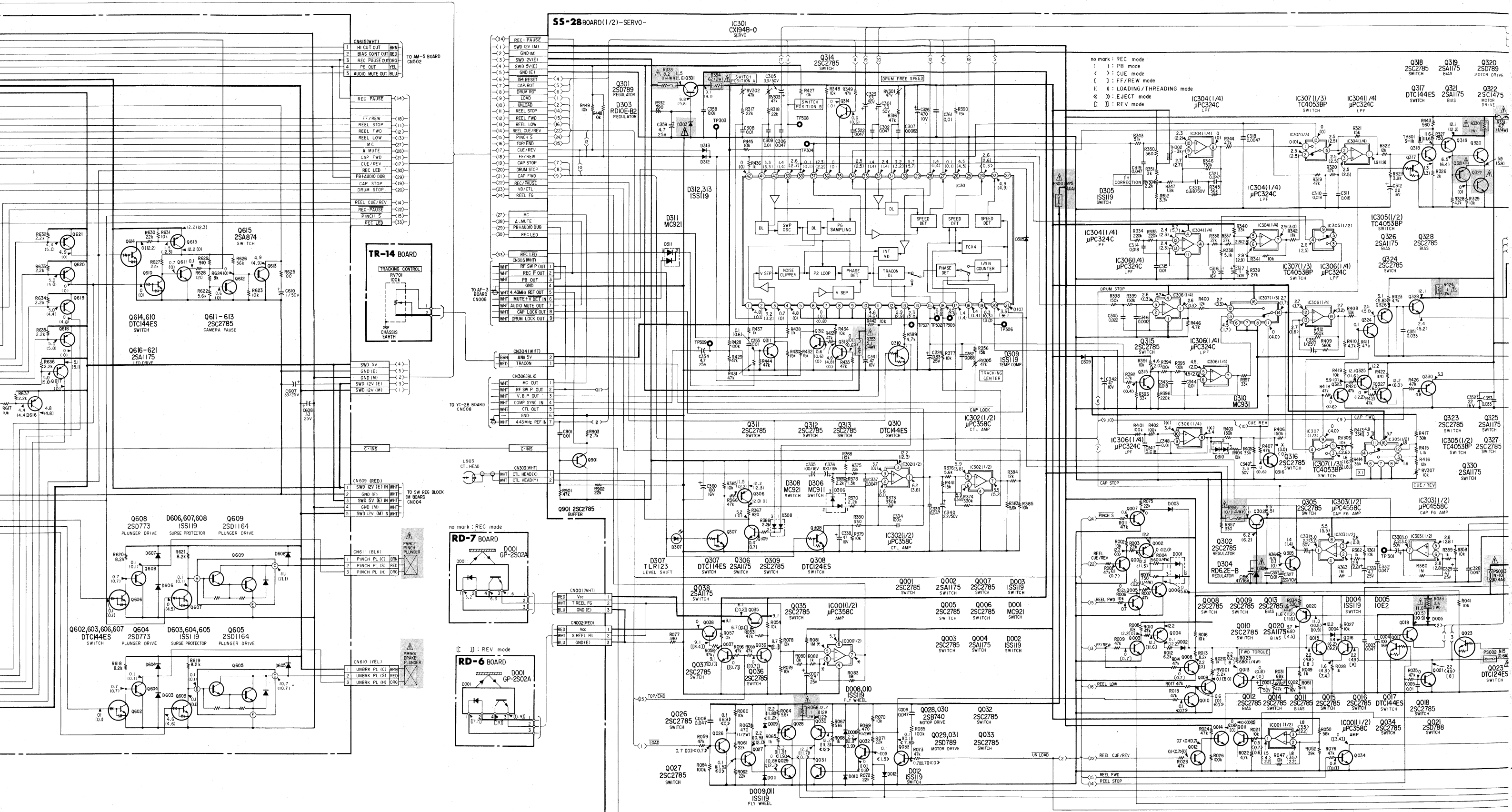


When indicating parts by reference number, please include the board name.

SERVO/SYSTEM CONTROL

SS-28 (SERVO/SYSTEM CONTROL), FU-22 (FUNCTION SWITCH & IND), TR-14 (TRACKING CONTROL), RD-6 (ROTATION DETECTOR), RD-7 (ROTATION DETECTOR), LM-8 (NOISE FILTER), CS-3 (CASSETTE ON SWITCH), CS-4 (CASSETTE ON SWITCH)
 - Ref. No. SS-28 BOARD : 4000 series, FU-22 BOARD : 7000 series, TR-14 BOARD : 5000 series, RD-6 BOARD : 6700 series, RD-7 BOARD : 6800 series, LM-8 BOARD : 7000 series, CS-3, CS-4 BOARD : 6000 series, PT-7 BOARD : 7700 series, REEL MOTOR BOARD : 7500 series -

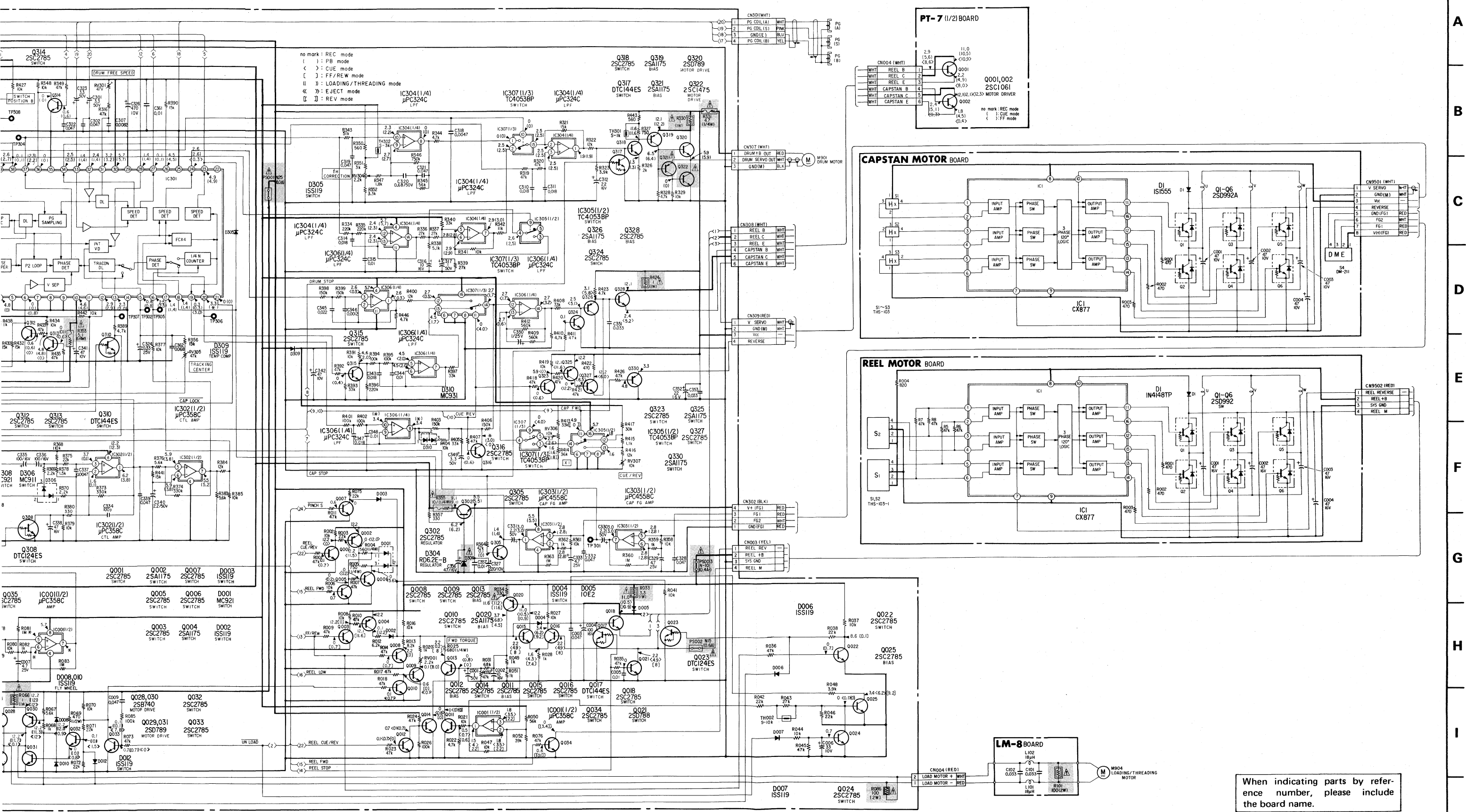




SERVO/SYSTEM CONTROL SERVO/SYSTEM CONTROL

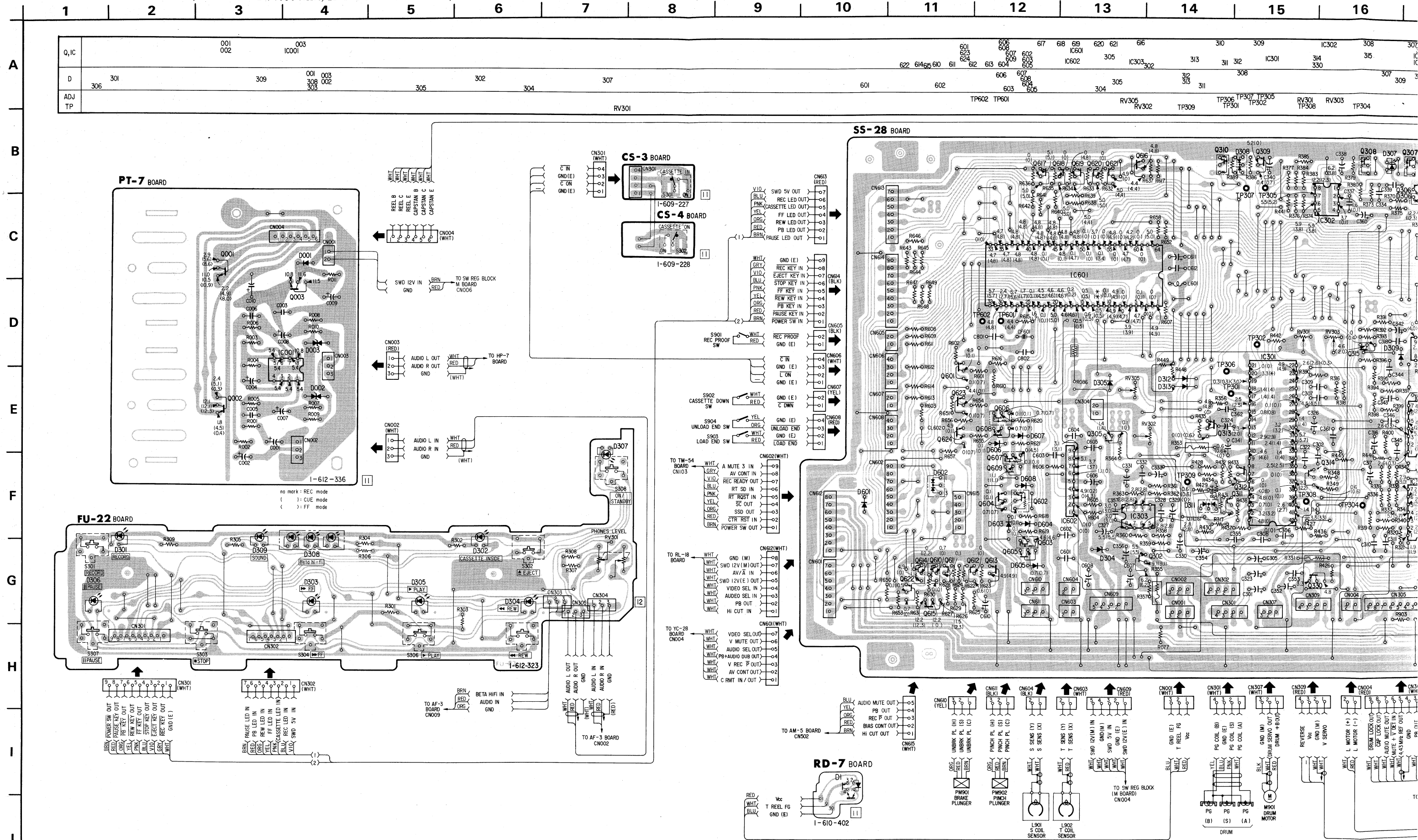
TOR DRIVE), CAPSTAN MOTOR, REEL MOTOR SCHEMATIC DIAGRAM

19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35



SERVO/SYSTEM CONTROL SERVO/SYSTEM CONTROL

SS-28 (SERVO/SYSTEM CONTROL), FU-22 (FUNCTION SWITCH & IND), TR-14 (TRACKING CONTROL), RD-6 (ROTATION DETECTOR), RD-7 (ROTATION DETECTOR), LM-8 (NOISE FILTER), CS-3 (CASSETTE ON SWITCH), CS-4 (CASSETTE IN SWI
- Ref. No. SS-28 BOARD : 4000 series, FU-22 BOARD : 7000 series, TR-14 BOARD : 5000 series, RD-6 BOARD : 6700 series, RD-7 BOARD : 6800 series, LM-8 BOARD : 7000 series, CS-3, CS-4 BOARD : 6000 series, PT-7 BOARD : 7700 series, REEL MOTOR BOARD : 7500 series -

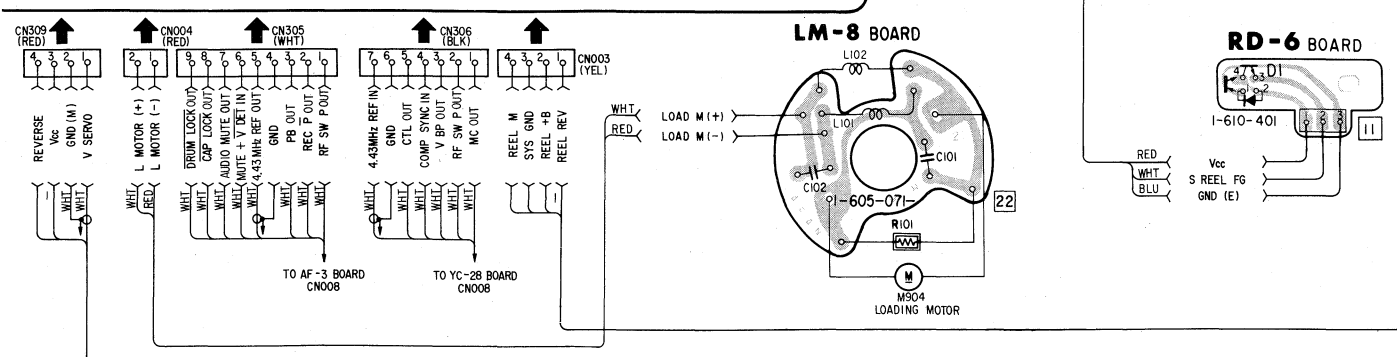
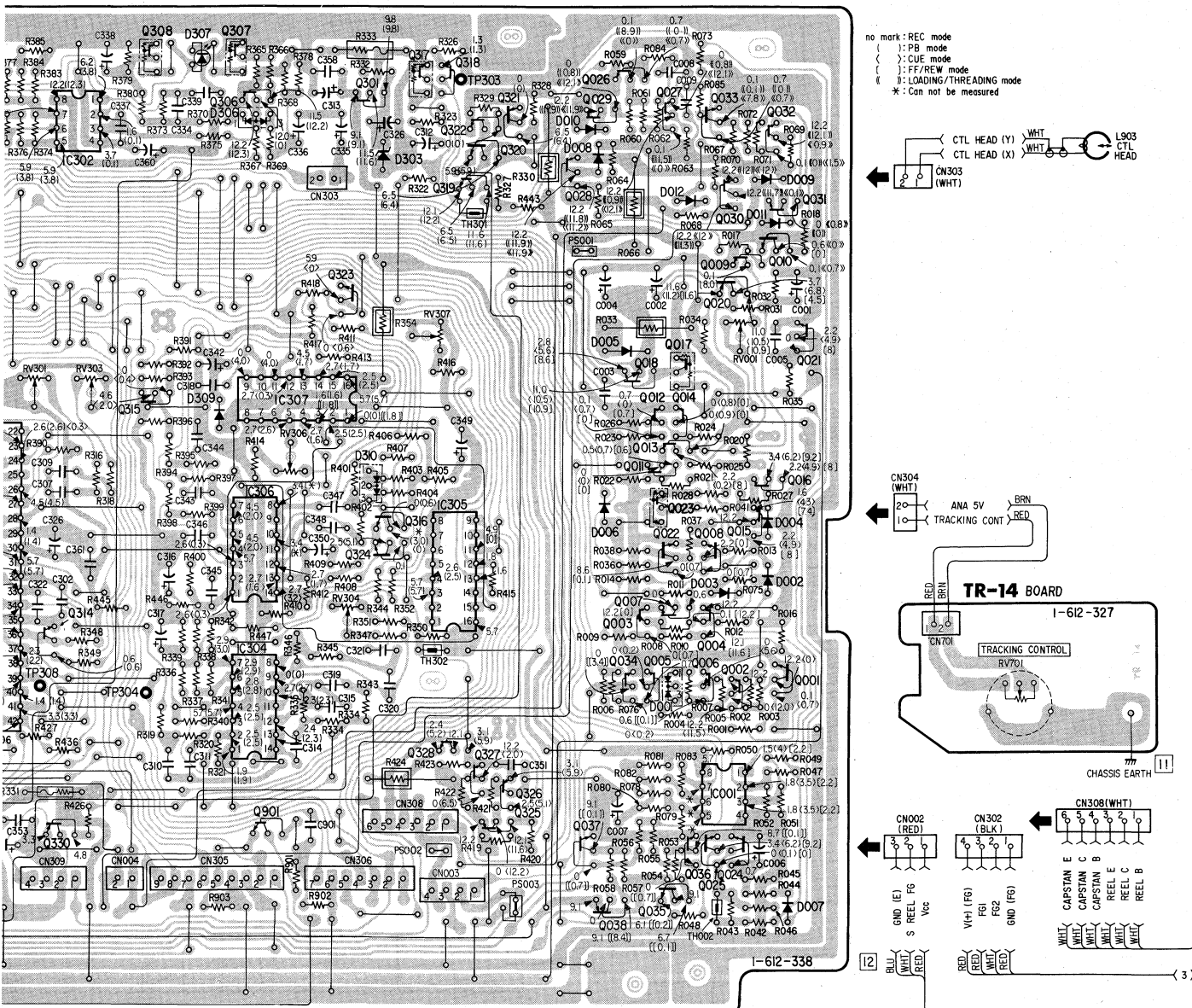


SERVO/SYSTEM CONTROL

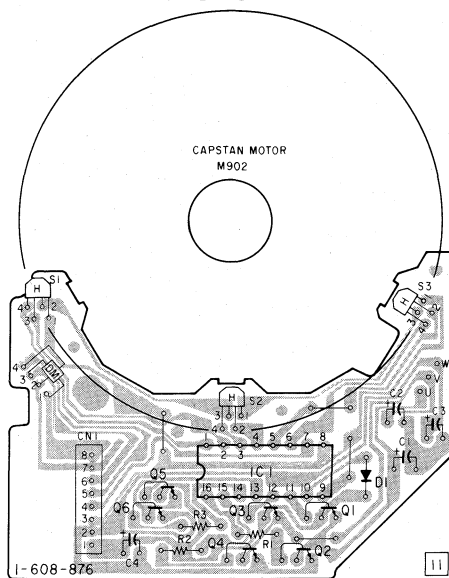
S-4 (CASSETTE IN SWITCH), PT-7 (REEL & CAPSTAN MOTOR DRIVE), CAPSTAN MOTOR, REEL MOTOR PRINTED WIRING BOARDS

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

IC302	308	307	306	IC307	301	317	318	322	321	028	029	026	012	027	033	030	032		
314	315	IC306	IC305	323	319	320	018	017	007	008	020	009	015	011	014	IC001	004	002	015
330		IC304	901		303	324	034	037	038	005	022	035	036	024	016	001			Q, IC
		307	309	306		303		010		006, 008	005		012		003	009	011		D
					310							001			002	007			
RV301 TP308	RV303	TP304		RV306		RV307	TP303								RV001			RV701	ADJ TP



CAPSTAN MOTOR BOARD



Note:

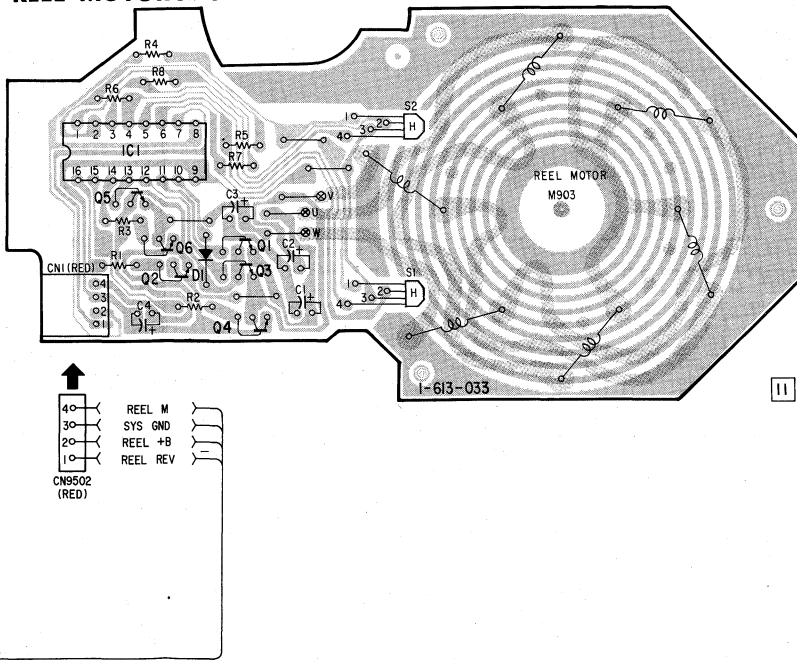
- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted.
50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
-  : Nonflammable resistor
-  : Fusible resistor
-  : B + bus.
- The voltage value is a reference value between the *grounding* when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10M Ω).

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

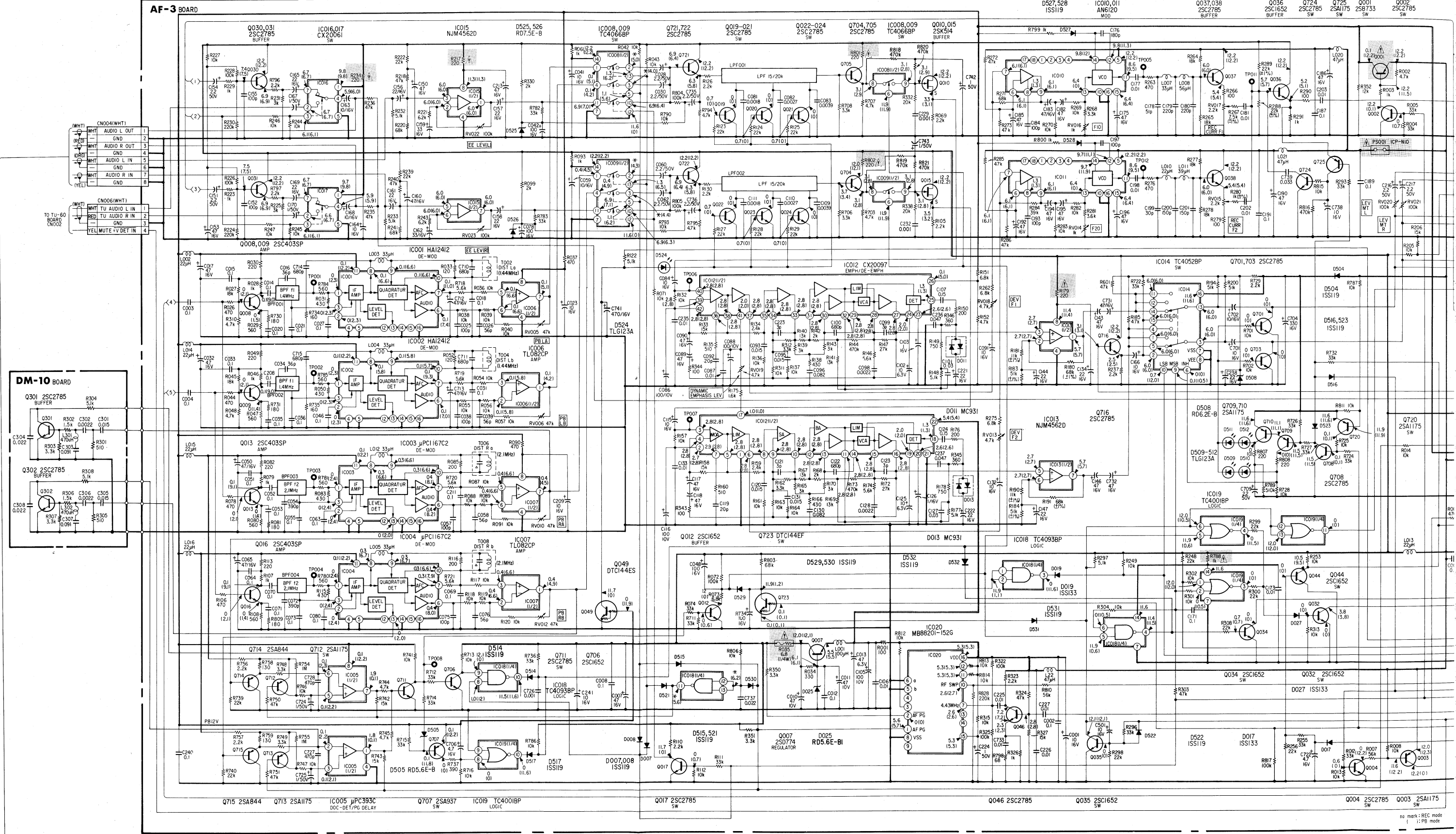
- Note:**
- — : indicates a lead wire mounted on the component side.
 - — : indicates a lead wire mounted on the printed side.
 -  : soldering side
 -  : component side
 -  : B+ pattern

REEL MOTOR BOARD



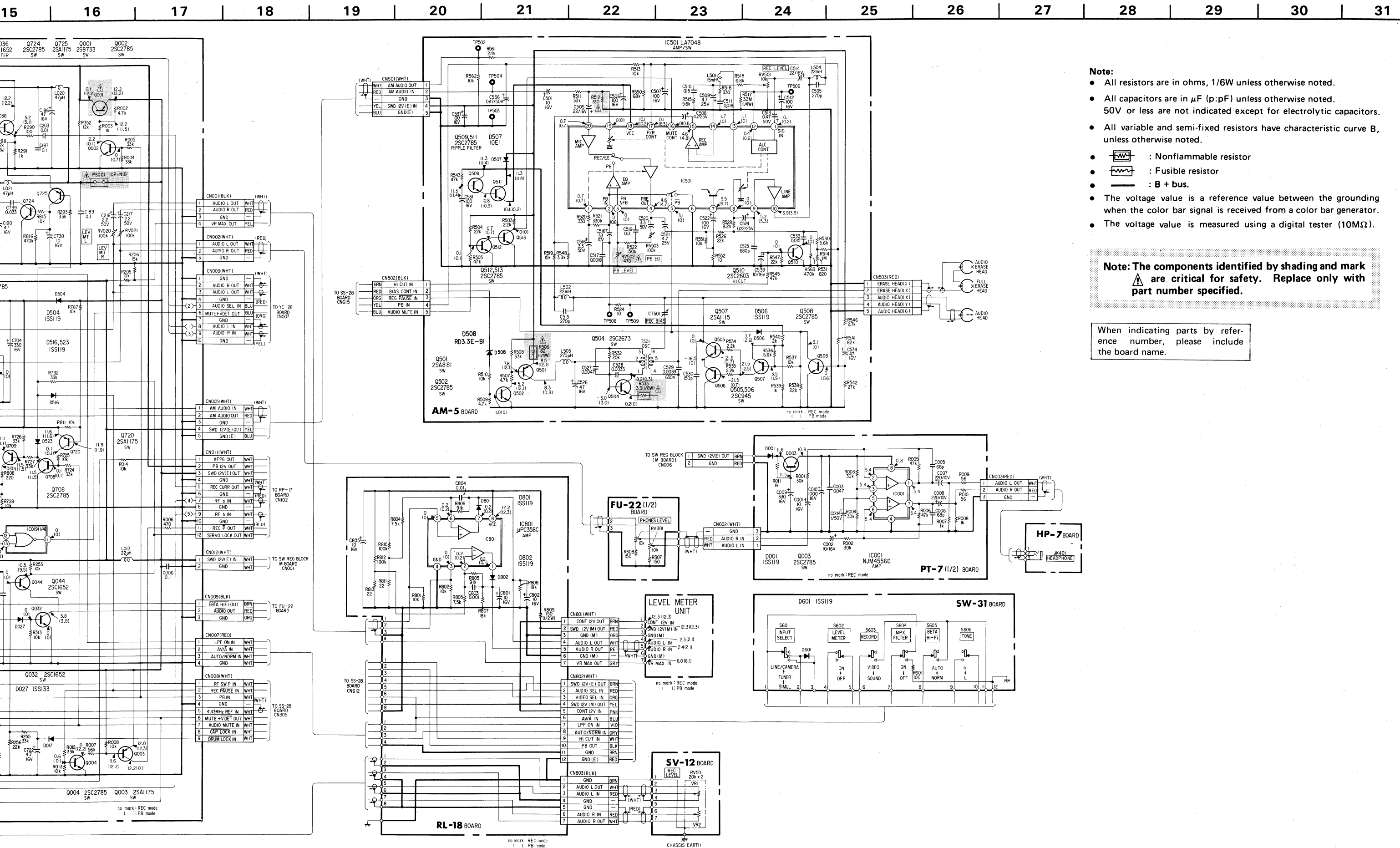
AUDIO AUDIO

AF-3 (AFM SIGNAL RECORD/PLAYBACK PROCESS), AM-5 (AUDIO SIGNAL REC/PB PROCESS), RL-18 (LEVEL METER DRIVE), FU-22 (HEADPHONE LEVEL), PT-7 (HEADPHONE AMP), HP-7 (HEADPHONE JACK), SW-31 (FUNCTION SWITCH), SV-12 (A – Ref. No. AF-3 BOARD : 3000 series, AM-5 BOARD : 2000 series, RL-18 BOARD : 5000 series, FU-22 BOARD : 7000 series, PT-7 BOARD : 7700 series, HP-7 BOARD : 5000 series, SW-31 BOARD : 6000 series, SV-12 BOARD : 6000 series, DM-10 BOARD : 9000 series –



AUDIO AUDIO

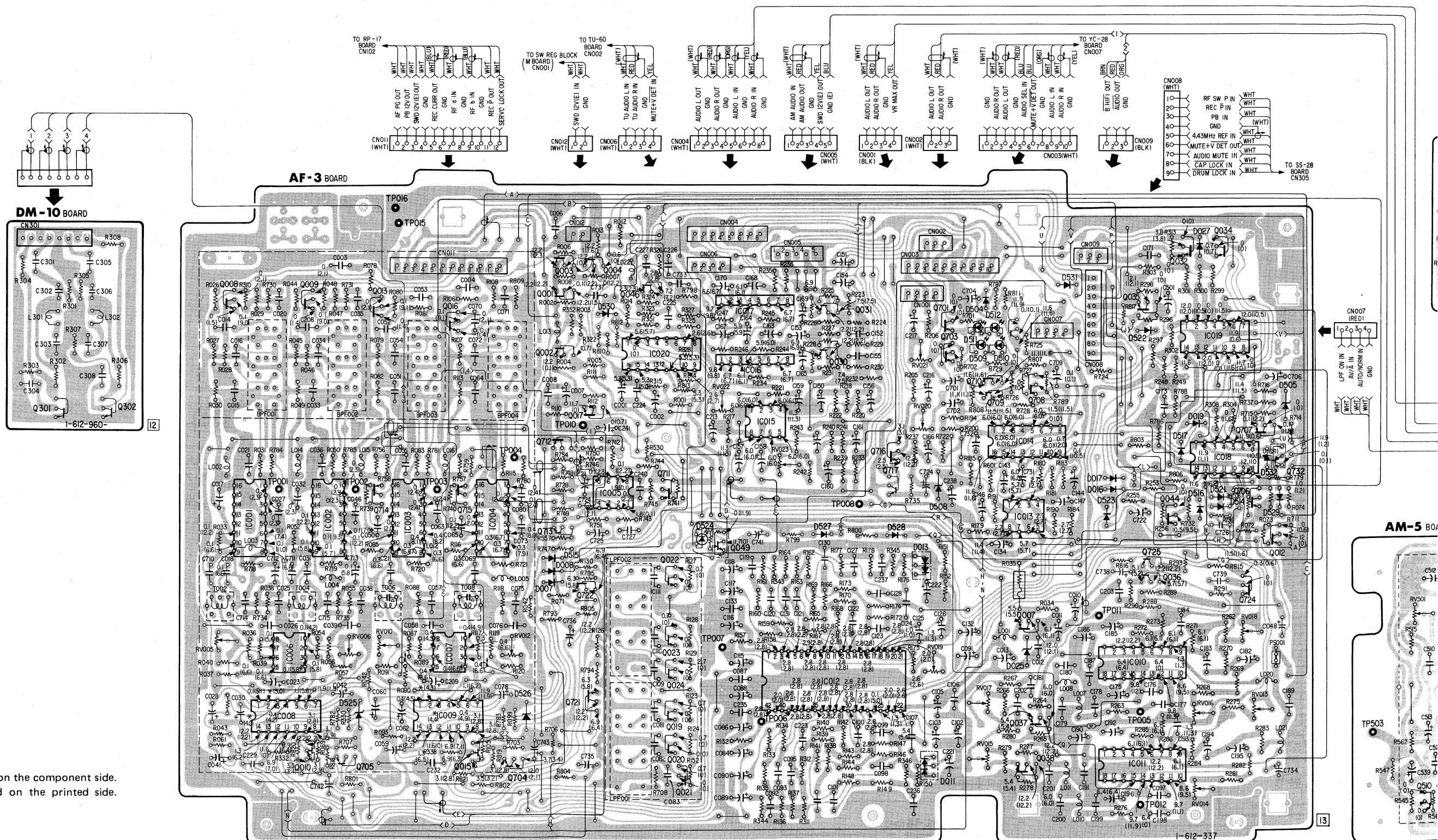
FUNCTION SWITCH), SV-12 (AUDIO LEVEL), DM-10 (AFM PROCESS), LEVEL METER UNIT SCHEMATIC DIAGRAM



AUDIO AUDIO

AF-3 (AFM SIGNAL RECORD/PLAYBACK PROCESS), AM-5 (AUDIO SIGNAL REC/PB PROCESS), RL-18 (LEVEL METER DRIVE), FU-22 (HEADPHONE LEVEL), PT-7 (HEADPHONE AMP), HP-7 (HEADPHONE JACK), SW-31 (FUNCTION SWITCH), SV-12 (— Ref. No. AF-3 BOARD : 3000 series, AM-5 BOARD : 2000 series, RL-18 BOARD : 5000 series, FU-22 BOARD : 7000 series, PT-7 BOARD : 7700 series, HP-7 BOARD : 5000 series, SW-31 BOARD : 6000 series, SV-12 BOARD : 6000 series, DM-10 BOARD : 9000 series —

		3	4	5	6	7	8	9	10	11	12	13	14	15	16								
Q IC				008 IC001	009 IC002	013 714 IC003	016 715 IC004	003 001 002 712 713	004 IC005 017 722 721	IC020 046 711 023 024 020 021	IC017 IC016 IC015	031 030 IC012	716 703 710 709 IC014 IC013 007 038	720 708 037	035 725 036 IC010 IC011	032 044 IC019 IC018	034 707 723 706 724 012						
D		301	302		IC006 IC008 010 705		IC007 IC009 015 704		530					504 511,512 509,510	025	531	017 522	517 521 514	532 505 529				
ADJ TP				RV005		525		526	515 008 007	TP010		RV022 TP007	RV023 TP006	TP008	RV021 RV020	RV019	RV017 RV015	TP011	TP005 TP012	RV016 RV014	RV018 RV013	TP503	RV501
					TP001	TP002 RV006	TP016 TP015 RV010	TP003	TP004														



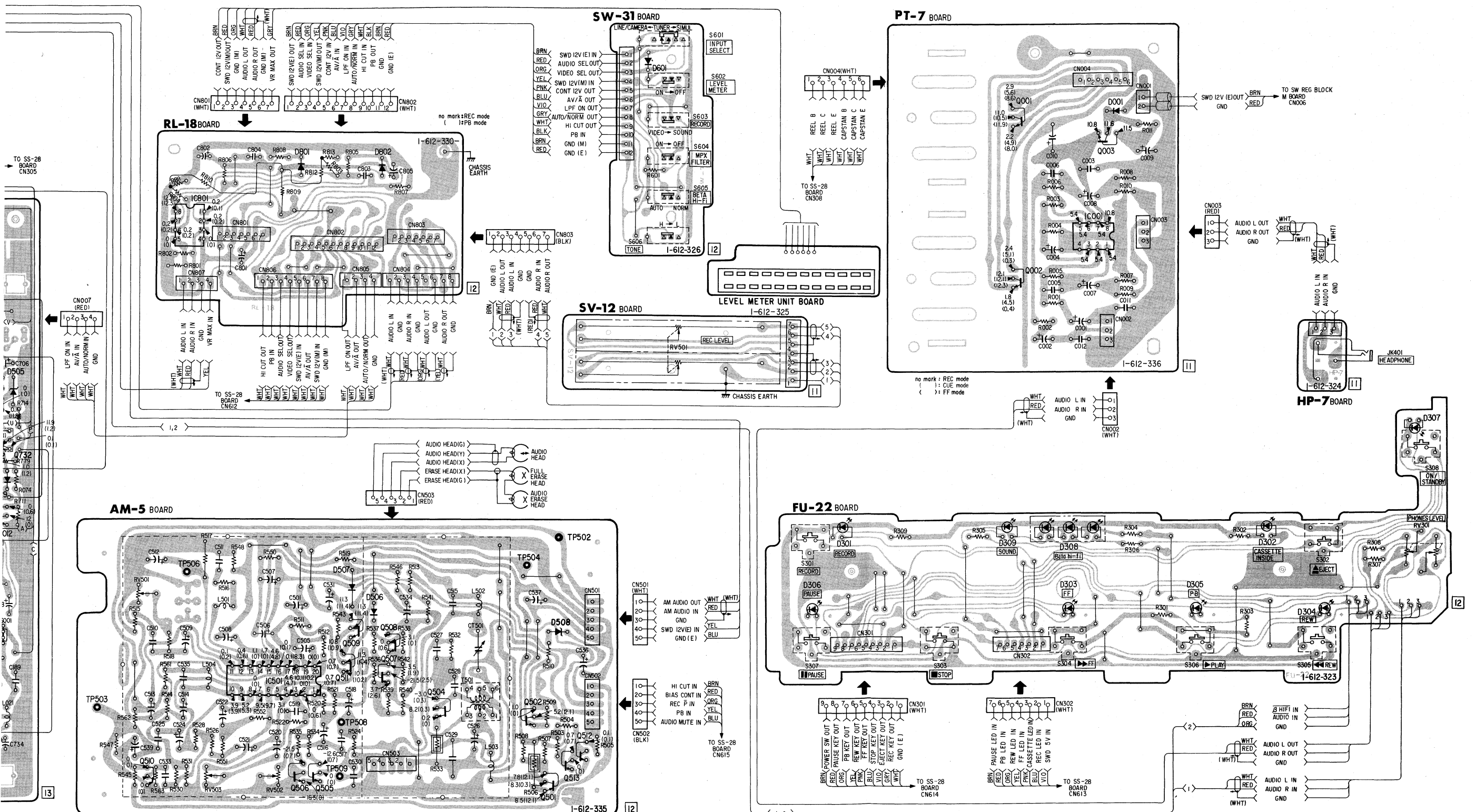
When indicating parts by reference number, please include the board name.

- Note:**
- — : indicates a lead wire mounted on the component side.
 - — : indicates a lead wire mounted on the printed side.
 - : soldering side
 - : B+ pattern

AUDIO AUDIO

CTION SWITCH), SV-12 (AUDIO LEVEL), DM-10 (AFM PROCESS), LEVEL METER UNIT PRINTED WIRING BOARDS

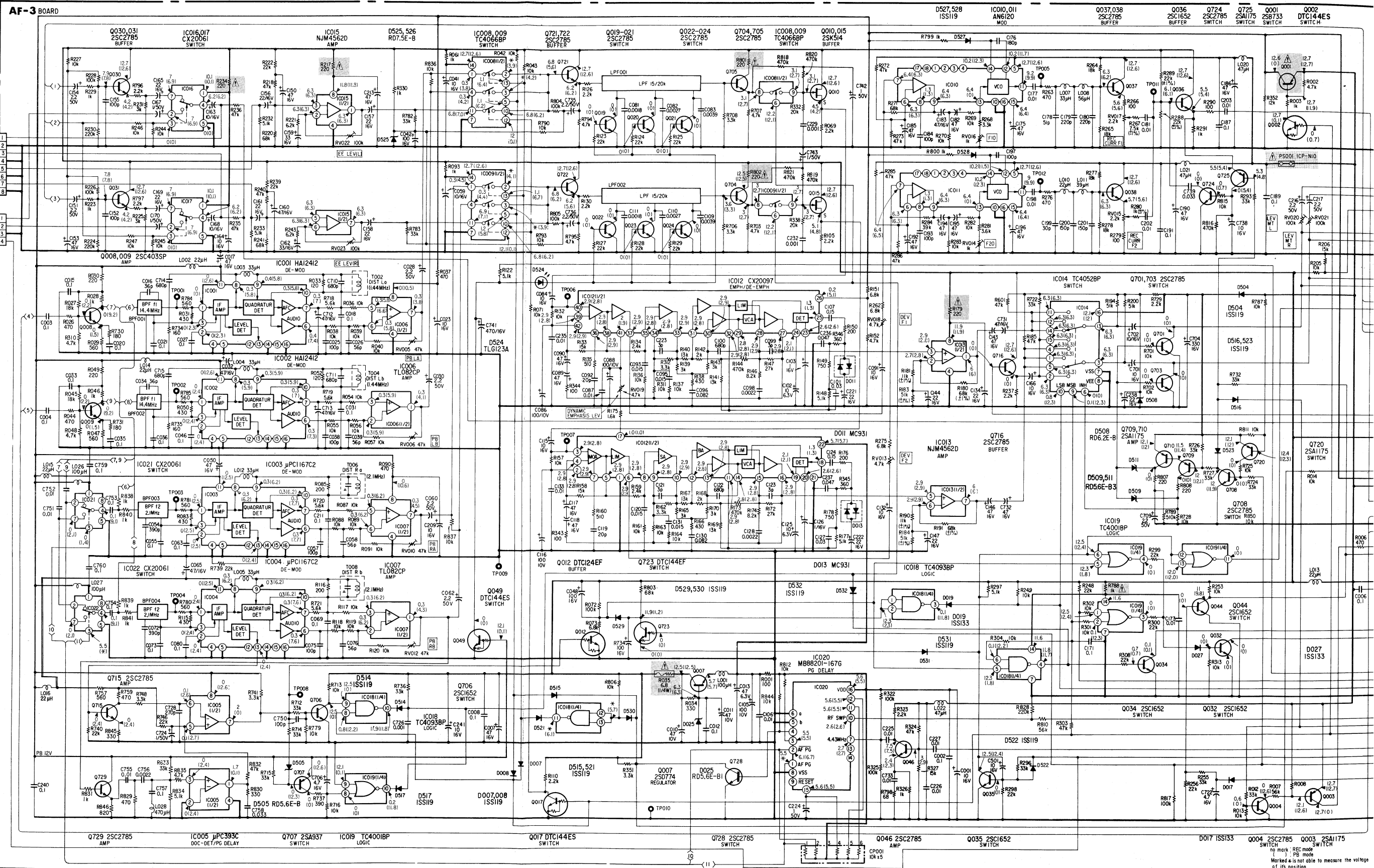
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
--	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	--	--

[illegible]

AUDIO AUDIO

AF-3 (AFM SIGNAL RECORD/PLAYBACK PROCESS), AM-5 (AUDIO SIGNAL REC/PB PROCESS), RL-18 (LEVEL METER DRIVE), FU-22 (HEADPHONE LEVEL), PT-7 (HEADPHONE AMP), HP-7 (HEADPHONE JACK), SW-31 (FUNCTION SWITCH), SV-12 (Ref. No. AF-3 BOARD : 3000 series, AM-5 BOARD : 2000 series, RL-18 BOARD : 5000 series, FU-22 BOARD : 7000 series, PT-7 BOARD : 7700 series, HP-7 BOARD : 5000 series, SW-31 BOARD : 6000 series, SV-12 BOARD : 6000 series)

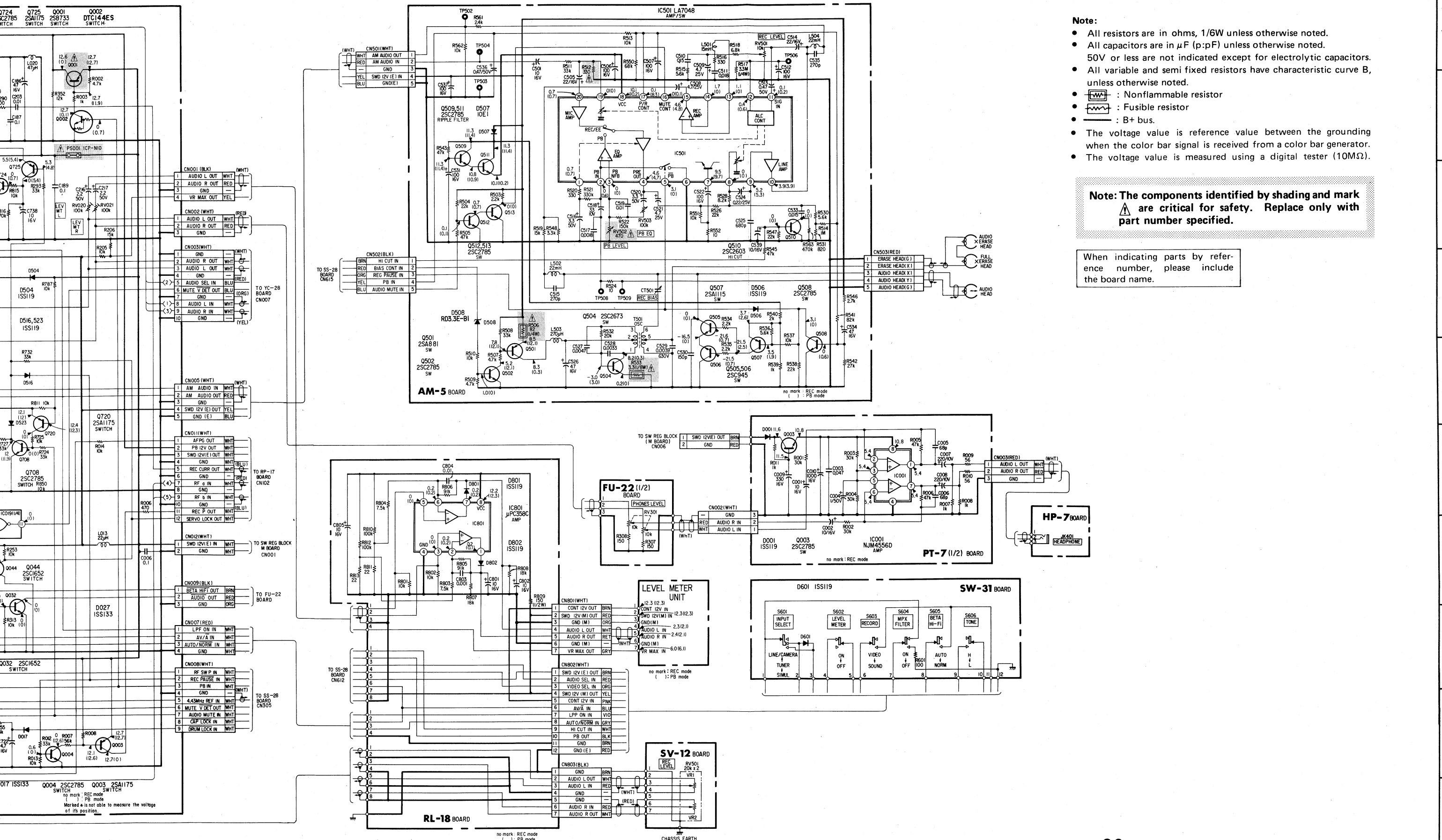
A
B
C
D
E
F
G
H
I
J



AUDIO AUDIO

JUNCTION SWITCH), SV-12 (AUDIO LEVEL), LEVEL METER UNIT SCHEMATIC DIAGRAM

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31



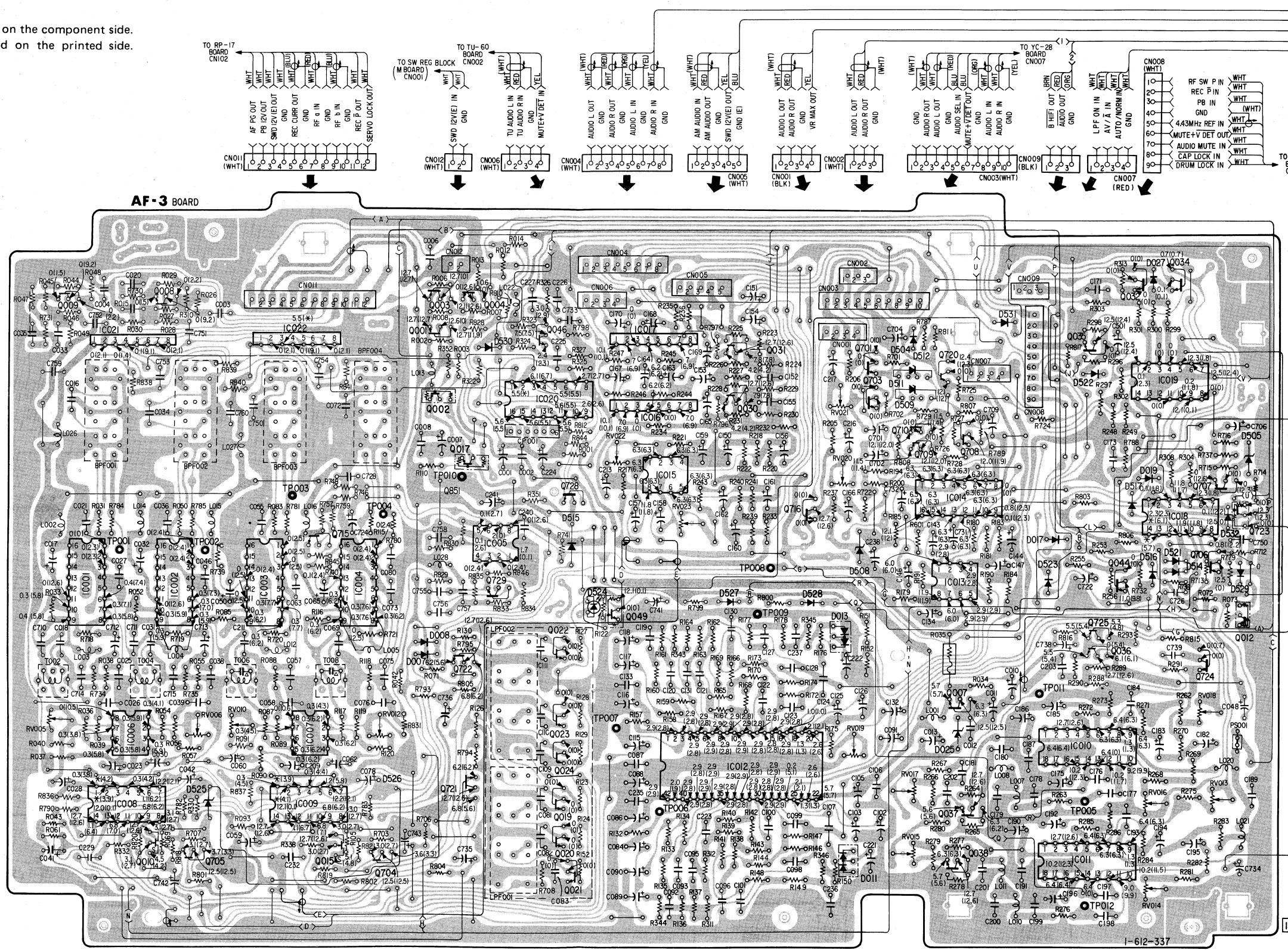
AUDIO AUDIO

AF-3 (AFM SIGNAL RECORD/PLAYBACK PROCESS), AM-5 (AUDIO SIGNAL REC/PB PROCESS), RL-18 (LEVEL METER DRIVE), FU-22 (HEADPHONE LEVEL), PT-7 (HEADPHONE AMP), HP-7 (HEADPHONE JACK), SW-31 (FUNCTION SWITCH), SV-12 (AU
- Ref. No. AF-3 BOARD : 3000 series, AM-5 BOARD : 2000 series, RL-18 BOARD : 5000 series, FU-22 BOARD : 7000 series, PT-7 BOARD : 7700 series, HP-7 BOARD : 5000 series, SW-31 BOARD : 6000 series, SV-12 BOARD : 6000 series -

- Note:**
- — : indicates a lead wire mounted on the component side.
 - — : indicates a lead wire mounted on the printed side.
 - ■ : soldering side
 - ■ : B+ pattern

When indicating parts by reference number, please include the board name.

Q, IC	D	RV, TP
032 034	027	
008		
009 003		
IC022	531	
001, 046	504	
IC02, IC017		
031 035 701	530	
703 720	511	
IC019	522	RV021
002 IC020	509	
IC016		RV020
710 708		RV022
709	505	
017 707	019	
IC015		TP003
IC014 723	517 532	TP010
728 IC018		TP004
715		RV023
IC005 706	515 508	TP001
044	521 516 529	TP002
IC001, IC002	523	
IC003 IC004		
IC013		
729	528	
049 012	524, 527	TP009
725 724		
022 036	013	
722	007	
007		TP011
IC006		RV018
IC007		RV010
IC010	025	RV012
IC012 024		RV005
721		TP007
IC008		RV019
IC009, 037		RV016
019	525	RV017
010 015		RV013
705 704		TP005
038 IC011		TP006
021	011	
		RV015
		RV014
		TP012

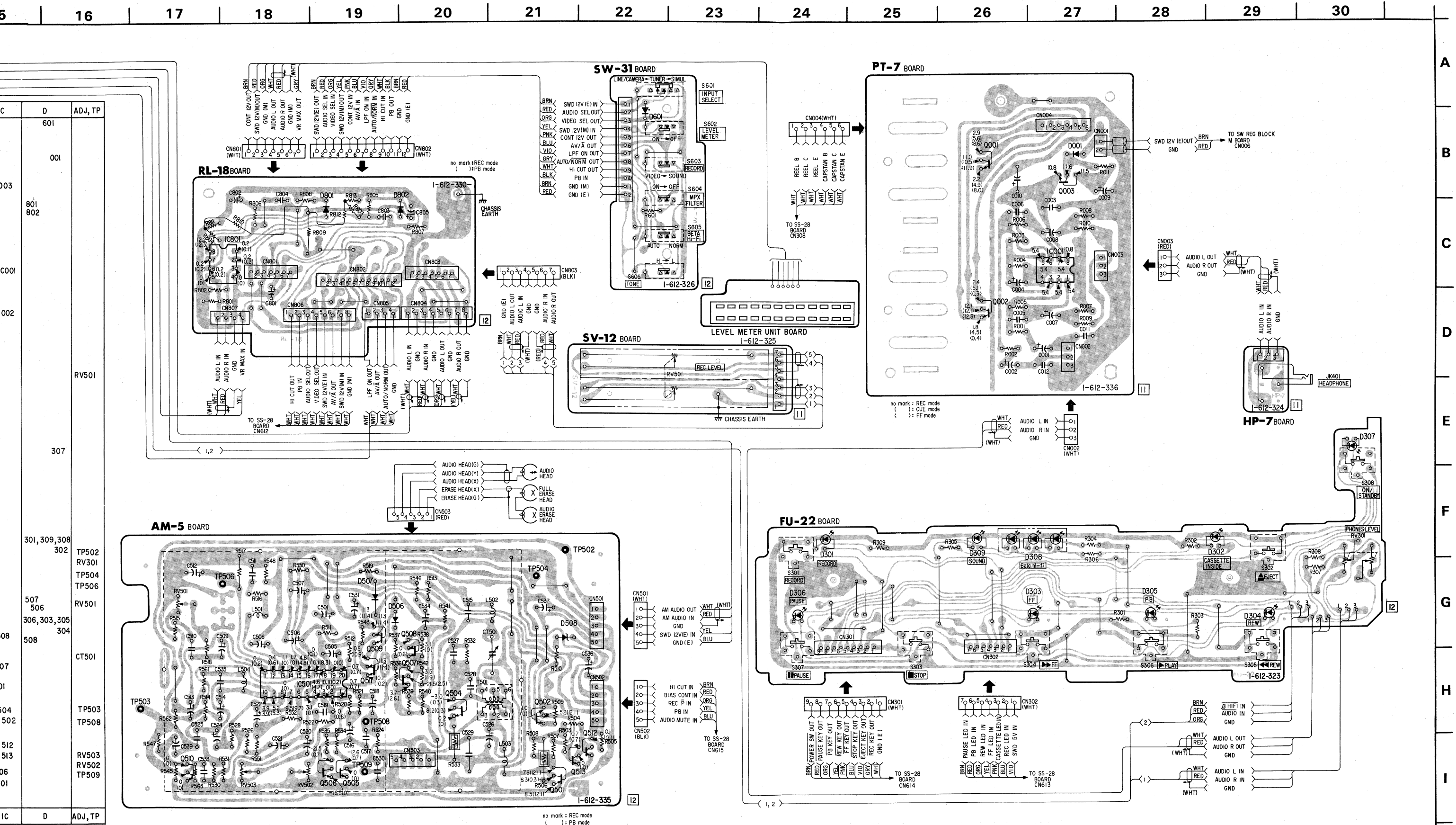


Q, IC	D	ADJ, TP
001	601	
003		
801 802		
IC801		IC001
002		
		RV501
		307
301, 309, 308		TP502
302		RV301
		TP504
507 506		TP506
306, 303, 305		RV501
508		CT501
509, 508		
511, 507		IC501
		TP503
504 502		TP508
512 513		RV503
510, 506		RV502
505, 501		TP509

no mark : REC mode
1 : PB not able to measure the voltage of it's position

AUDIO AUDIO

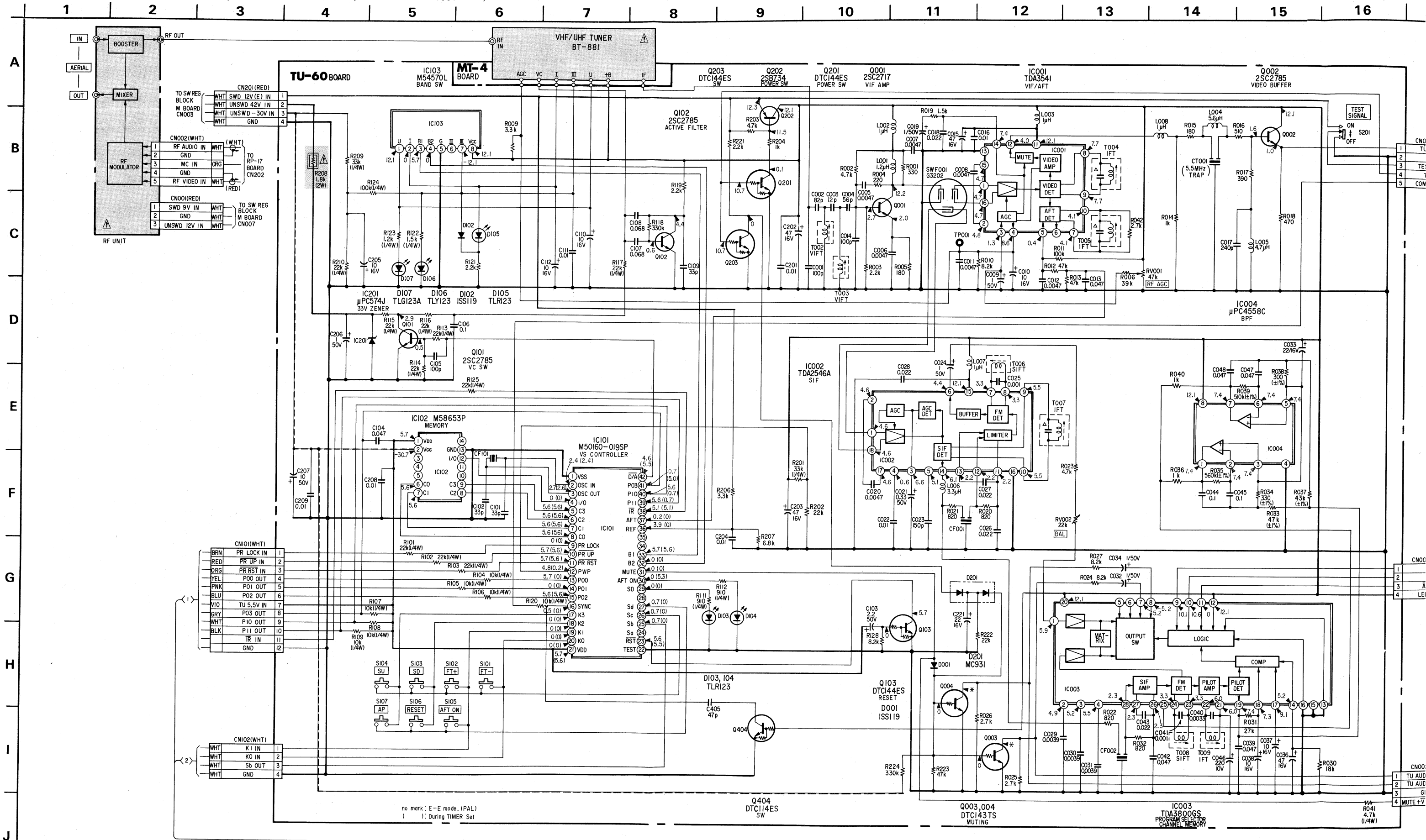
SECTION 27-0000 COMMUNICATIONS



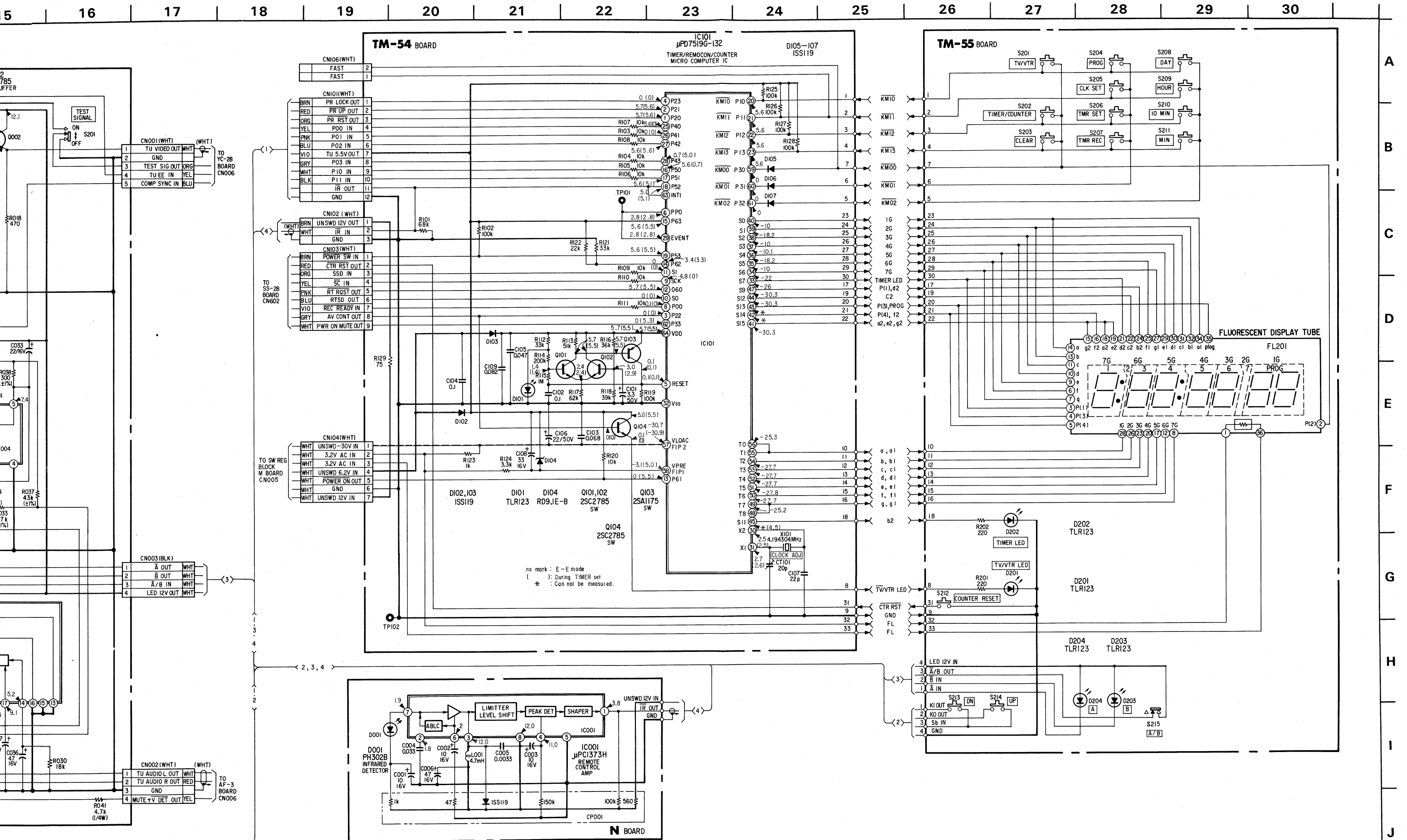
TUNER/TIMER TUNER/TIMER

TU-60 (VIF, SIF, AFT, AGC CHANNEL PRESET), MT-9 (TUNER), TM-54 (TIMER, REMOTE CONTROL, COUNTER), TM-55 (CHANNEL SWITCH, TIMER SWITCH), N (INFRARED AMP) SCHEMATIC DIAGRAM

– Ref. No. TU-60, MT-4 BOARD : 5000 series, TM-54 BOARD: 6000 series, TM-55 BOARD : 6000 series, N BOARD : 6400 series –



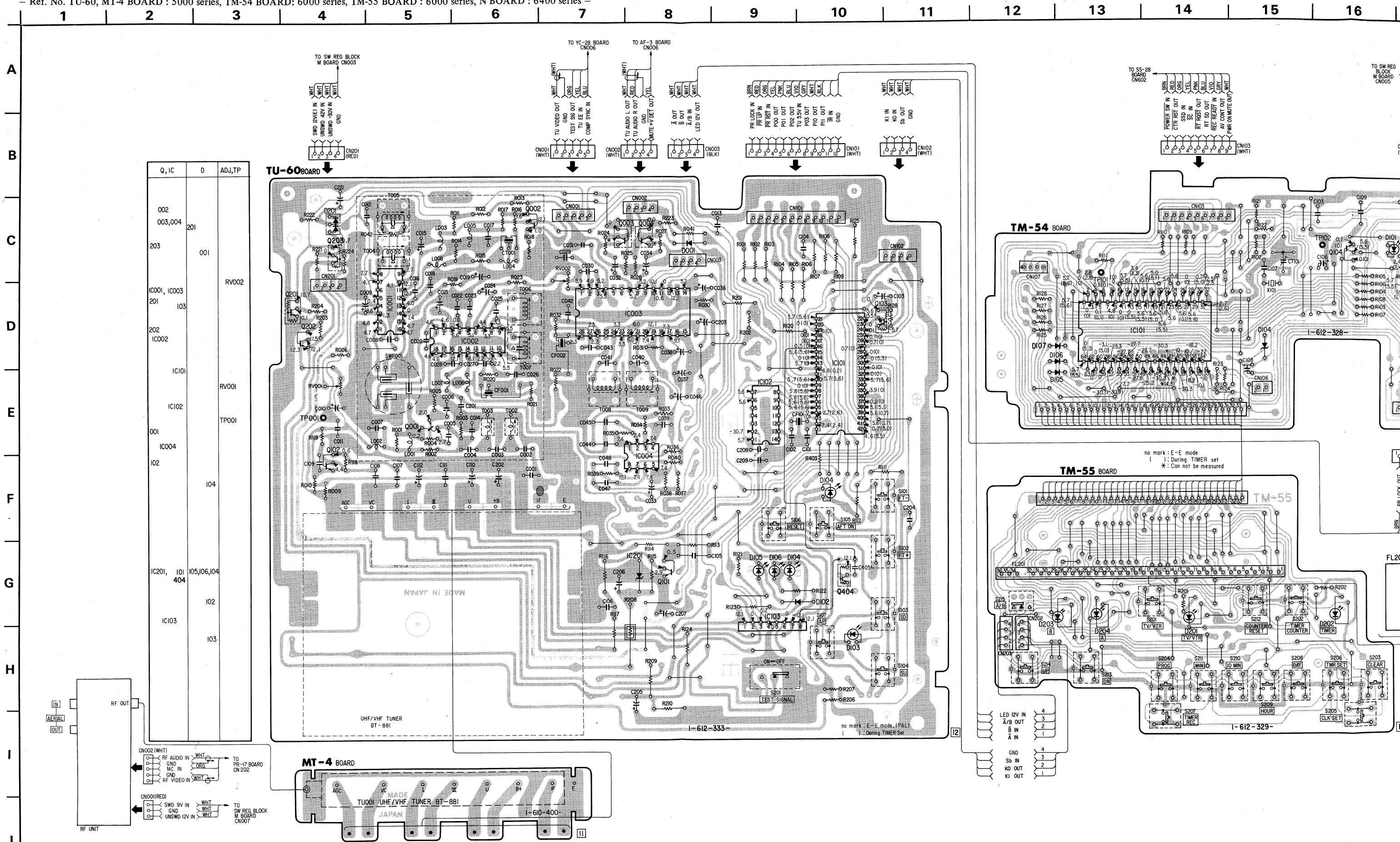
TUNER/TIMER TUNER/TIMER

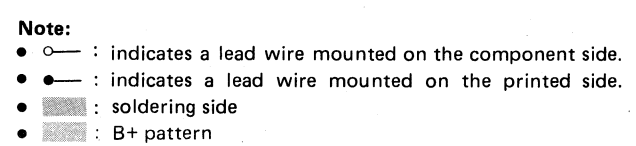


TUNER/TIMER TUNER/TIMER

TU-60 (VIF, SIF, AFT, AGC CHANNEL PRESET), MT-9 (TUNER), TM-54 (TIMER, REMOTE CONTROL, COUNTER), TM-55 (CHANNEL SWITCH, TIMER SWITCH), N (INFRARED AMP) PRINTED WIRING BOARDS

— Ref. No. TU-60, MT-4 BOARD : 5000 series, TM-54 BOARD: 6000 series, TM-55 BOARD : 6000 series, N BOARD : 6400 series —





ELECTRICAL PARTS LIST

Note:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

• =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

• Items marked " **A** " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS
• MF : μ F, PF : μ F

RESISTORS
• All resistors are in ohms
• F : nonflammable

COILS
• MMH : mH, UH : μ H

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
	A-4910-049-A	R STATOR (REEL MOTOR) BOARD, COMPLETE			A-6023-241-A	PT-7 BOARD, COMPLETE	
	1-560-460-00	PIN, CONNECTOR 4P			3-684-037-01	HEAT SINK, PT	
					7-621-770-87	SCREW +B 2.6X5	
CAPACITOR				CAPACITOR			
C1	1-123-821-00	ELECT 47MF 20% 16V		C001	1-123-356-00	ELECT 10MF 20% 16V	
C2	1-123-821-00	ELECT 47MF 20% 16V		C002	1-123-356-00	ELECT 10MF 20% 16V	
C3	1-123-821-00	ELECT 47MF 20% 16V		C003	1-101-006-00	CERAMIC 0.047MF 50V	
C4	1-123-821-00	ELECT 47MF 20% 16V		C004	1-123-380-00	ELECT 1MF 20% 50V	
DIODE				C005	1-101-888-00	CERAMIC 68PF 5% 50V	
D1	8-719-941-48	DIODE 1N4148TP		C006	1-101-888-00	CERAMIC 68PF 5% 50V	
IC				C007	1-123-308-00	ELECT 220MF 20% 10V	
IC1	8-759-108-77	IC CX877		C008	1-123-308-00	ELECT 220MF 20% 10V	
TRANSISTOR				C009	1-123-322-00	ELECT 330MF 20% 16V	
Q1	8-729-100-01	TRANSISTOR 2SD992		C010	1-123-839-00	ELECT 1000MF 20% 16V	
Q2	8-729-100-01	TRANSISTOR 2SD992		CONNECTOR			
Q3	8-729-100-01	TRANSISTOR 2SD992		CN002	1-560-891-00	PIN, CONNECTOR 3P	
Q4	8-729-100-01	TRANSISTOR 2SD992		CN003	1-560-891-00	PIN, CONNECTOR 3P	
Q5	8-729-100-01	TRANSISTOR 2SD992		CN004	1-560-894-00	PIN, CONNECTOR 6P	
Q6	8-729-100-01	TRANSISTOR 2SD992		DIODE			
RESISTOR				D001	8-719-911-19	DIODE 1SS119	
R1	1-247-823-00	CARBON 470 5% 1/6W		IC			
R2	1-247-823-00	CARBON 470 5% 1/6W		IC001	8-759-745-56	IC NJM4556D	
R3	1-247-823-00	CARBON 470 5% 1/6W		TRANSISTOR			
R4	1-247-829-00	CARBON 820 5% 1/6W		Q001	8-729-316-16	TRANSISTOR 2SC1061	
R5	1-247-871-00	CARBON 47K 5% 1/6W		Q002	8-729-316-16	TRANSISTOR 2SC1061	
R6	1-247-871-00	CARBON 47K 5% 1/6W		Q003	8-729-178-54	TRANSISTOR 2SC2785	
R7	1-247-871-00	CARBON 47K 5% 1/6W		RESISTOR			
R8	1-247-871-00	CARBON 47K 5% 1/6W		R001	1-247-866-00	CARBON 30K 5% 1/6W	
DIODE				R002	1-247-866-00	CARBON 30K 5% 1/6W	
S1	8-719-810-31	DIODE THS103-1		R003	1-247-866-00	CARBON 30K 5% 1/6W	
S2	8-719-810-31	DIODE THS103-1		R004	1-247-866-00	CARBON 30K 5% 1/6W	
				R005	1-247-871-00	CARBON 47K 5% 1/6W	
				R006	1-247-871-00	CARBON 47K 5% 1/6W	
				R007	1-247-831-00	CARBON 1K 5% 1/6W	
				R008	1-247-831-00	CARBON 1K 5% 1/6W	
				R009	1-247-801-00	CARBON 56 5% 1/6W	
				R010	1-247-801-00	CARBON 56 5% 1/6W	
				R011	1-247-831-00	CARBON 1K 5% 1/6W	

Ref.No	Part No.	Description	Remark
	A-6711-527-A	YC-28 BOARD, COMPLETE	
	1-536-796-21	TERMINAL BOARD, CONTROL PANEL	
FILTER BAND PASS			
BPF001	1-235-098-00	FILTER, BAND PASS	
CAPACITOR			
C001	1-123-356-00	ELECT 10MF 20% 16V	
C002	1-123-356-00	ELECT 10MF 20% 16V	
C003	1-123-356-00	ELECT 10MF 20% 16V	
C004	1-123-356-00	ELECT 10MF 20% 16V	
C005	1-123-356-00	ELECT 10MF 20% 16V	
C006	1-123-356-00	ELECT 10MF 20% 16V	
C007	1-101-004-00	CERAMIC 0.01MF 50V	
C008	1-123-332-00	ELECT 47MF 20% 16V	
C009	1-123-311-00	ELECT 1000MF 20% 10V	
C010	1-123-356-00	ELECT 10MF 20% 16V	
C011	1-123-356-00	ELECT 10MF 20% 25V	
C013	1-123-306-00	ELECT 47MF 20% 10V	
C014	1-123-381-00	ELECT 2.2MF 20% 50V	
C015	1-123-306-00	ELECT 47MF 20% 10V	
C016	1-108-589-00	MYLAR 0.027MF 5% 50V	
C017	1-101-004-00	CERAMIC 0.01MF 50V	
C018	1-123-306-00	ELECT 47MF 20% 10V	
C019	1-101-004-00	CERAMIC 0.01MF 50V	
C020	1-101-004-00	CERAMIC 0.01MF 50V	
C021	1-101-004-00	CERAMIC 0.01MF 50V	
C022	1-101-004-00	CERAMIC 0.01MF 50V	
C023	1-101-882-00	CERAMIC 51PF 5% 50V	
C024	1-130-047-00	FILM 180PF 5% 50V	
C025	1-106-172-00	MYLAR 0.001MF 5% 50V	
C026	1-101-059-00	CERAMIC 510PF 5% 50V	
C027	1-161-045-00	CERAMIC 0.0033MF 10% 25V	
C028	1-106-172-00	MYLAR 0.001MF 5% 50V	
C029	1-123-382-00	ELECT 3.3MF 20% 50V	
C031	1-101-004-00	CERAMIC 0.01MF 50V	
C032	1-102-816-00	CERAMIC 120PF 5% 50V	
C033	1-101-004-00	CERAMIC 0.01MF 50V	
C034	1-101-004-00	CERAMIC 0.01MF 50V	
C035	1-102-816-00	CERAMIC 120PF 5% 50V	
C036	1-101-882-00	CERAMIC 51PF 5% 50V	
C037	1-101-004-00	CERAMIC 0.01MF 50V	
C038	1-101-004-00	CERAMIC 0.01MF 50V	
C039	1-101-004-00	CERAMIC 0.01MF 50V	
C040	1-101-004-00	CERAMIC 0.01MF 50V	
C041	1-161-043-00	CERAMIC 0.0022MF 10% 25V	
C042	1-102-516-00	CERAMIC 27PF 5% 50V	
C043	1-101-004-00	CERAMIC 0.01MF 50V	
C044	1-101-004-00	CERAMIC 0.01MF 50V	
C045	1-102-523-00	CERAMIC 56PF 5% 50V	
C046	1-101-004-00	CERAMIC 0.01MF 50V	
C047	1-101-004-00	CERAMIC 0.01MF 50V	
C048	1-101-004-00	CERAMIC 0.01MF 50V	
C049	1-101-004-00	CERAMIC 0.01MF 50V	
C050	1-102-865-00	CERAMIC 8PF 0.5PF 50V	

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C051	1-102-525-00	CERAMIC 68PF 5% 50V		C111	1-102-525-00	CERAMIC 68PF 5% 50V	
C052	1-102-525-00	CERAMIC 68PF 5% 50V		C112	1-102-525-00	CERAMIC 68PF 5% 50V	
C053	1-123-379-00	ELECT 0.47MF 20% 50V		C113	1-102-525-00	CERAMIC 68PF 5% 50V	
C054	1-161-040-00	CERAMIC 0.0012MF 10% 25V		C114	1-102-525-00	CERAMIC 68PF 5% 50V	
C055	1-123-380-00	ELECT 1MF 20% 50V		C116	1-102-962-00	CERAMIC 30PF 5% 50V	
C056	1-102-962-00	CERAMIC 30PF 5% 50V		C117	1-102-981-00	CERAMIC 300PF 5% 50V	
C057	1-102-981-00	CERAMIC 300PF 5% 50V		C118	1-123-306-00	ELECT 47MF 20% 10V	
C058	1-123-306-00	ELECT 47MF 20% 10V		C119	1-101-004-00	CERAMIC 0.01MF 50V	
C059	1-101-004-00	CERAMIC 0.01MF 50V		C120	1-108-579-00	MYLAR 0.01MF 5% 50V	
C060	1-108-579-00	MYLAR 0.01MF 5% 50V		C121	1-123-382-00	ELECT 3.3MF 20% 50V	
C061	1-123-382-00	ELECT 3.3MF 20% 50V		C122	1-123-306-00	ELECT 47MF 20% 10V	
C062	1-123-306-00	ELECT 47MF 20% 10V		C123	1-101-004-00	CERAMIC 0.01MF 50V	
C063	1-101-004-00	CERAMIC 0.01MF 50V		C124	1-102-521-00	CERAMIC 43PF 5% 50V	
C064	1-102-521-00	CERAMIC 43PF 5% 50V		C125	1-102-971-00	CERAMIC 82PF 5% 50V	
C065	1-102-971-00	CERAMIC 82PF 5% 50V		C127	1-102-518-00	CERAMIC 33PF 5% 50V	
C066	1-102-518-00	CERAMIC 33PF 5% 50V		C128	1-161-025-00	CERAMIC 0.1MF 10% 25V	
C067	1-161-025-00	CERAMIC 0.1MF 10% 25V		C129	1-101-004-00	CERAMIC 0.01MF 50V	
C068	1-101-004-00	CERAMIC 0.01MF 50V		C130	1-102-962-00	CERAMIC 30PF 5% 50V	
C069	1-102-962-00	CERAMIC 30PF 5% 50V		C131	1-101-004-00	CERAMIC 0.01MF 50V	
C070	1-101-004-00	CERAMIC 0.01MF 50V		C132	1-123-380-00	ELECT 1MF 20% 50V	
C071	1-123-380-00	ELECT 1MF 20% 50V		C133	1-101-004-00	CERAMIC 0.01MF 50V	
C072	1-101-004-00	CERAMIC 0.01MF 50V		C134	1-102-525-00	CERAMIC 68PF 5% 50V	
C073	1-102-525-00	CERAMIC 68PF 5% 50V		C135	1-102-525-00	CERAMIC 68PF 5% 50V	
C074	1-102-525-00	CERAMIC 68PF 5% 50V		C136	1-101-004-00	CERAMIC 0.01MF 50V	
C075	1-101-004-00	CERAMIC 0.01MF 50V		C137	1-102-951-00	CERAMIC 15PF 5% 50V	
C076	1-102-951-00	CERAMIC 15PF 5% 50V		C138	1-123-330-00	ELECT 22MF 20% 16V	
C077	1-123-330-00	ELECT 22MF 20% 16V		C139	1-123-330-00	ELECT 22MF 20% 16V	
C078	1-123-330-00	ELECT 22MF 20% 16V		C140	1-101-004-00	CERAMIC 0.01MF 50V	
C080	1-101-004-00	CERAMIC 0.01MF 50V		C141	1-161-024-00	CERAMIC 0.082MF 10% 25V	
C082	1-161-024-00	CERAMIC 0.082MF 10% 25V		C142	1-102-977-00	CERAMIC 200PF 5% 50V	
C083	1-102-977-00	CERAMIC 200PF 5% 50V		C144	1-123-369-00	ELECT 4.7MF 20% 25V	
C084	1-123-369-00	ELECT 4.7MF 20% 25V		C145	1-101-004-00	CERAMIC 0.01MF 50V	
C085	1-101-004-00	CERAMIC 0.01MF 50V		C146	1-108-557-00	MYLAR 0.0012MF 5% 50V	
C086	1-108-557-00	MYLAR 0.0012MF 5% 50V		C147	1-161-057-00	CERAMIC 0.033MF 10% 25V	
C087	1-161-057-00	CERAMIC 0.033MF 10% 25V		C148	1-101-361-00	CERAMIC 150PF 5% 50V	
C088	1-101-361-00	CERAMIC 150PF 5% 50V		C155	1-101-004-00	CERAMIC 0.01MF 50V	
C092	1-101-004-00	CERAMIC 0.01MF 50V		C156	1-101-006-00	CERAMIC 0.047MF 5% 50V	
C093	1-101-006-00	CERAMIC 0.047MF 5% 50V		C157	1-102-976-00	CERAMIC 180PF 5% 50V	
C095	1-102-976-00	CERAMIC 180PF 5% 50V		C158	1-102-824-00	CERAMIC 470PF 5% 50V	
C096	1-102-824-00	CERAMIC 470PF 5% 50V		C159	1-102-823-00	CERAMIC 430PF 5% 50V	
C097	1-102-823-00	CERAMIC 430PF 5% 50V		C178	1-102-820-00	CERAMIC 330PF 5% 50V	
C098	1-102-820-00	CERAMIC 330PF 5% 50V		C179	1-102-851-00	CERAMIC 15PF 5% 50V	
C099	1-102-851-00	CERAMIC 15PF 5% 50V		C180	1-161-025-00	CERAMIC 0.1MF 10% 25V	
C100	1-161-025-00	CERAMIC 0.1MF 10% 25V		C181	1-108-595-00	MYLAR 0.047MF 5% 50V	
C101	1-108-595-00	MYLAR 0.047MF 5% 50V		C182	1-161-043-00	CERAMIC 0.0022MF 10% 25V	
C102	1-161-043-00	CERAMIC 0.0022MF 10% 25V		C183	1-106-172-00	MYLAR 0.001MF 5% 50V	
C103	1-106-172-00	MYLAR 0.001MF 5% 50V		C184	1-102-977-00	CERAMIC 200PF 5% 50V	
C104	1-102-977-00	CERAMIC 200PF 5% 50V		C185	1-102-973-00	CERAMIC 100PF 5% 50V	
C105	1-102-973-00	CERAMIC 100PF 5% 50V		C186	1-123-356-00	ELECT 10MF 20% 16V	
C106	1-123-356-00	ELECT 10MF 20% 16V		C187	1-161-025-00	CERAMIC 0.1MF 10% 25V	
C107	1-161-025-00	CERAMIC 0.1MF 10% 25V		C188	1-101-004-00	CERAMIC 0.01MF 50V	
C108	1-101-004-00	CERAMIC 0.01MF 50V		C189	1-101-004-00	CERAMIC 0.01MF 50V	
C109	1-101-004-00	CERAMIC 0.01MF 50V		C190	1-101-004-00	CERAMIC 0.01MF 50V	

When indicating parts by reference number, please include the board name.

When indicating parts by reference number, please include the board name.

When indicating parts by reference number, please include the board name.

Ref.No Part No. Description

FILTER

CF001 1-527-998-00 FILTER, CERAMIC
CF002 1-527-875-00 FILTER, CERAMIC
CF003 1-527-849-00 FILTER, CERAMIC

CONNECTOR

CN001 ▲1-564-035-11 PIN, CONNECTOR 10P
CN003 ▲1-560-891-00 PIN, CONNECTOR 3P
CN004 ▲1-560-895-00 PIN, CONNECTOR 7P
CN005 ▲1-560-893-00 PIN, CONNECTOR 5P
CN006 ▲1-560-893-00 PIN, CONNECTOR 5P

CN007 ▲1-560-898-00 PIN, CONNECTOR 10P
CN008 ▲1-560-895-00 PIN, CONNECTOR 7P
CN009 1-507-840-00 JACK, MINIATURE
CN010 1-562-121-00 CONNECTOR, DIN 6P

TRIMMER

CV001 1-141-275-00 CAP, TRIMMER

DIODE

D001 =>8-719-911-19 DIODE 1SS119
D002 =>8-719-911-19 DIODE 1SS119
D005 =>8-719-911-19 DIODE 1SS119
D006 8-719-000-06 DIODE MC921
D009 8-719-000-06 DIODE MC921

D011 =>8-719-911-19 DIODE 1SS119
D012 =>8-719-911-19 DIODE 1SS119
D013 =>8-719-911-19 DIODE 1SS119
D014 =>8-719-911-19 DIODE 1SS119
D015 =>8-719-911-19 DIODE 1SS119

D016 8-719-000-12 DIODE MC931
D017 =>8-719-911-19 DIODE 1SS119
D018 =>8-719-911-19 DIODE 1SS119
D019 =>8-719-911-19 DIODE 1SS119
D020 =>8-719-911-19 DIODE 1SS119

D021 =>8-719-911-19 DIODE 1SS119
D022 =>8-719-911-19 DIODE 1SS119
D023 =>8-719-911-19 DIODE 1SS119
D025 =>8-719-911-19 DIODE 1SS119
D027 8-719-000-06 DIODE MC921

D029 8-719-100-56 DIODE RD10E-B1
D030 =>8-719-911-19 DIODE 1SS119
D031 =>8-719-911-19 DIODE 1SS119
D033 =>8-719-911-19 DIODE 1SS119
D036 =>8-719-911-19 DIODE 1SS119

DELAY LINE

DL001 1-415-313-00 DELAY LINE (1H)
DL401 1-415-352-11 DELAY LINE, 1H
DL501 1-415-282-00 DELAY LINE

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Remark Ref.No Part No. Description Remark

IC

IC001 8-759-909-20 IC BA634
IC002 8-759-904-95 IC BA7007
IC003 8-759-201-68 IC CX10023
IC004 8-759-208-94 IC CX894
IC005 8-752-006-10 IC CX20061

IC006 8-759-202-00 IC CX10021A-NP
IC009 8-759-101-62 IC CX20043
IC011 8-752-006-10 IC CX20061
IC012 8-759-979-26 IC CX7926
IC401=>8-758-662-00 IC CX866B

COIL

L001 1-407-499-00 MICRO INDUCTOR 3.9MMH
L002 1-407-496-00 MICRO INDUCTOR 2.2MMH
L003 1-408-408-00 MICRO INDUCTOR 8.2UH
L004 1-408-406-00 MICRO INDUCTOR 5.6UH
L005 1-408-415-00 MICRO INDUCTOR 33UH

L006 1-408-428-00 MICRO INDUCTOR 390UH
L007 1-408-427-00 MICRO INDUCTOR 330UH
L008 1-408-421-00 MICRO INDUCTOR 100UH
L010 1-408-427-00 MICRO INDUCTOR 330UH
L011 1-408-423-00 MICRO INDUCTOR 150UH

L012 1-408-409-00 MICRO INDUCTOR 10UH
L014 1-408-422-00 MICRO INDUCTOR 120UH
L015 1-408-419-00 MICRO INDUCTOR 68UH
L016 1-408-413-00 MICRO INDUCTOR 22UH
L017 1-408-423-00 MICRO INDUCTOR 150UH

L018 1-408-419-00 MICRO INDUCTOR 68UH
L019 1-408-416-00 MICRO INDUCTOR 39UH
L020 1-408-416-00 MICRO INDUCTOR 39UH
L021 1-408-422-00 MICRO INDUCTOR 120UH
L022 1-408-424-00 MICRO INDUCTOR 180UH

L023 1-408-422-00 MICRO INDUCTOR 120UH
L026 1-408-416-00 MICRO INDUCTOR 39UH
L036 1-408-429-00 MICRO INDUCTOR 470UH
L040 1-408-575-00 MICRO INDUCTOR 100UH
L041 1-408-424-00 MICRO INDUCTOR 180UH

L042 1-407-163-XX MICRO INDUCTOR 33UH

L401 1-408-397-00 MICRO INDUCTOR 1UH
L402 1-408-397-00 MICRO INDUCTOR 1UH
L501 1-408-408-00 MICRO INDUCTOR 8.2UH

L502 1-408-423-00 MICRO INDUCTOR 150UH

FILTER LOW PASS

LPF001 1-235-097-00 FILTER, LOW PASS

VARIABLE COIL

LV001 1-407-291-00 MICRO INDUCTOR 15MMH
LV002 1-407-573-00 COIL, VARIABLE 47UH
LV003 1-407-571-00 COIL, VARIABLE 22UH
LV501 1-407-569-00 COIL, VARIABLE 10UH

IC LINK

PS001A 1-532-685-11 LINK, IC (ICP-N20)

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
TRANSISTOR							
Q001	8-729-900-36	TRANSISTOR DTC124ES		Q063	=>8-729-245-83	TRANSISTOR 2SC2458	
Q002	=>8-729-245-83	TRANSISTOR 2SC2458		Q064	=>8-729-245-83	TRANSISTOR 2SC2458	
Q003	8-729-600-12	TRANSISTOR 2SK108		Q065	=>8-729-245-83	TRANSISTOR 2SC2458	
Q004	=>8-729-245-83	TRANSISTOR 2SC2458		Q066	<u>△</u> 8-729-117-54	TRANSISTOR 2SA1175	
Q005	8-729-600-12	TRANSISTOR 2SK108		Q067	=>8-729-245-83	TRANSISTOR 2SC2458	
Q007	=>8-729-245-83	TRANSISTOR 2SC2458		Q068	=>8-729-245-83	TRANSISTOR 2SC2458	
Q010	8-729-177-32	TRANSISTOR 2SD773		Q069	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q011	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q070	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q014	8-729-113-33	TRANSISTOR 2SB733-4		Q071	=>8-729-245-83	TRANSISTOR 2SC2458	
Q015	8-729-900-80	TRANSISTOR DTC114ES		Q072	=>8-729-245-83	TRANSISTOR 2SC2458	
Q016	=>8-729-245-83	TRANSISTOR 2SC2458		Q074	=>8-729-245-83	TRANSISTOR 2SC2458	
Q019	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q075	8-729-900-85	TRANSISTOR DTC144WS	
Q020	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q100	8-729-900-85	TRANSISTOR DTC144WS	
Q021	=>8-729-245-83	TRANSISTOR 2SC2458		Q101	8-729-900-89	TRANSISTOR DTC144ES	
Q022	=>8-729-245-83	TRANSISTOR 2SC2458		Q102	8-729-900-65	TRANSISTOR DTA144ES	
Q023	=>8-729-245-83	TRANSISTOR 2SC2458		Q103	=>8-729-245-83	TRANSISTOR 2SC2458	
Q024	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q401	=>8-729-245-83	TRANSISTOR 2SC2458	
Q025	=>8-729-245-83	TRANSISTOR 2SC2458		Q501	=>8-729-245-83	TRANSISTOR 2SC2458	
Q026	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q502	=>8-729-245-83	TRANSISTOR 2SC2458	
Q027	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q503	=>8-729-245-83	TRANSISTOR 2SC2458	
Q028	=>8-729-245-83	TRANSISTOR 2SC2458		Q504	=>8-729-245-83	TRANSISTOR 2SC2458	
Q029	=>8-729-245-83	TRANSISTOR 2SC2458		RESISTOR			
Q030	=>8-729-245-83	TRANSISTOR 2SC2458		R001	1-247-838-00	CARBON 2K 5% 1/6W	
Q031	=>8-729-245-83	TRANSISTOR 2SC2458		R003	1-247-831-00	CARBON 1K 5% 1/6W	
Q032	=>8-729-245-83	TRANSISTOR 2SC2458		R005	1-247-827-00	CARBON 680 5% 1/6W	
Q033	=>8-729-245-83	TRANSISTOR 2SC2458		R006	1-247-879-00	CARBON 100K 5% 1/6W	
Q034	=>8-729-245-83	TRANSISTOR 2SC2458		R007	1-247-871-00	CARBON 47K 5% 1/6W	
Q035	8-729-603-30	TRANSISTOR 2SC403SP-3		R008	1-247-879-00	CARBON 100K 5% 1/6W	
Q036	8-729-603-30	TRANSISTOR 2SC403SP-3		R009	1-247-879-00	CARBON 100K 5% 1/6W	
Q037	8-729-384-46	TRANSISTOR 2SA844-C		R010	1-247-814-00	CARBON 200 5% 1/6W	
Q038	8-729-384-46	TRANSISTOR 2SA844-C		R011	1-247-871-00	CARBON 47K 5% 1/6W	
Q039	8-729-603-30	TRANSISTOR 2SC403SP-3		R012	1-247-827-00	CARBON 680 5% 1/6W	
Q040	8-729-603-30	TRANSISTOR 2SC403SP-3		R013	1-247-879-00	CARBON 100K 5% 1/6W	
Q041	8-729-384-46	TRANSISTOR 2SA844-C		R014	1-247-871-00	CARBON 47K 5% 1/6W	
Q042	8-729-603-30	TRANSISTOR 2SC403SP-3		R015	1-247-879-00	CARBON 100K 5% 1/6W	
Q043	8-729-603-30	TRANSISTOR 2SC403SP-3		R016	1-247-879-00	CARBON 100K 5% 1/6W	
Q044	8-729-603-30	TRANSISTOR 2SC403SP-3		R017	1-247-814-00	CARBON 200 5% 1/6W	
Q045	8-729-384-46	TRANSISTOR 2SA844-C		R018	1-247-871-00	CARBON 47K 5% 1/6W	
Q047	8-729-603-30	TRANSISTOR 2SC403SP-3		R022	1-247-847-00	CARBON 4.7K 5% 1/6W	
Q048	8-729-603-30	TRANSISTOR 2SC403SP-3		R026	1-247-867-00	CARBON 33K 5% 1/6W	
Q049	8-729-603-30	TRANSISTOR 2SC403SP-3		R027	1-247-867-00	CARBON 33K 5% 1/6W	
Q050	8-729-603-30	TRANSISTOR 2SC403SP-3		R028	1-247-877-00	CARBON 82K 5% 1/6W	
Q051	8-729-384-46	TRANSISTOR 2SA844-C		R031	<u>△</u> 1-212-857-00	FUSIBLE 10 5% 1/4W F	
Q052	8-729-603-30	TRANSISTOR 2SC403SP-3		R032	1-247-831-00	CARBON 1K 5% 1/6W	
Q053	8-729-384-46	TRANSISTOR 2SA844-C		R035	1-247-859-00	CARBON 15K 5% 1/6W	
Q054	8-729-384-46	TRANSISTOR 2SA844-C		R037	1-247-869-00	CARBON 39K 5% 1/6W	
Q055	8-729-384-46	TRANSISTOR 2SA844-C		R038	1-247-837-00	CARBON 1.8K 5% 1/6W	
Q056	8-729-603-30	TRANSISTOR 2SC403SP-3		R039	<u>△</u> 1-212-857-00	FUSIBLE 10 5% 1/4W F	
Q060	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R040	<u>△</u> 1-212-849-00	FUSIBLE 4.7 5% 1/4W F	
Q061	=>8-729-245-83	TRANSISTOR 2SC2458		R041	1-247-838-00	CARBON 2K 5% 1/6W	
Q062	=>8-729-204-83	TRANSISTOR 2SA1048-GR					

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R046	1-247-835-00	CARBON	1.5K 5% 1/6W	R104	1-247-839-00	CARBON	2.2K 5% 1/6W
R047	1-247-879-00	CARBON	100K 5% 1/6W	R105	1-247-829-00	CARBON	820 5% 1/6W
R048	1-247-831-00	CARBON	1K 5% 1/6W	R106	1-247-831-00	CARBON	1K 5% 1/6W
R049	1-247-863-00	CARBON	22K 5% 1/6W	R107	1-247-824-00	CARBON	510 5% 1/6W
R050	1-247-853-00	CARBON	8.2K 5% 1/6W	R108	1-247-843-00	CARBON	3.3K 5% 1/6W
R051	1-247-821-00	CARBON	390 5% 1/6W	R109	1-247-867-00	CARBON	33K 5% 1/6W
R052	1-247-819-00	CARBON	330 5% 1/6W	R111	1-247-846-00	CARBON	4.3K 5% 1/6W
R053	1-247-843-00	CARBON	3.3K 5% 1/6W	R112	1-247-854-00	CARBON	9.1K 5% 1/6W
R054	1-247-847-00	CARBON	4.7K 5% 1/6W	R113	1-247-843-00	CARBON	3.3K 5% 1/6W
R055	1-247-849-00	CARBON	5.6K 5% 1/6W	R114	1-247-828-00	CARBON	750 5% 1/6W
R056	1-247-867-00	CARBON	33K 5% 1/6W	R115	1-247-879-00	CARBON	100K 5% 1/6W
R058	1-247-855-00	CARBON	10K 5% 1/6W	R116	1-247-853-00	CARBON	8.2K 5% 1/6W
R059	1-247-859-00	CARBON	15K 5% 1/6W	R117	1-247-846-00	CARBON	4.3K 5% 1/6W
R060	1-247-867-00	CARBON	33K 5% 1/6W	R118	1-247-867-00	CARBON	33K 5% 1/6W
R061	1-247-855-00	CARBON	10K 5% 1/6W	R119	1-247-855-00	CARBON	10K 5% 1/6W
R062	1-247-855-00	CARBON	10K 5% 1/6W	R120	1-247-831-00	CARBON	1K 5% 1/6W
R063	1-247-841-00	CARBON	2.7K 5% 1/6W	R121	1-247-831-00	CARBON	1K 5% 1/6W
R064	1-247-848-00	CARBON	5.1K 5% 1/6W	R122	1-247-839-00	CARBON	2.2K 5% 1/6W
R065	1-247-889-00	CARBON	270K 5% 1/6W	R123	1-247-841-00	CARBON	2.7K 5% 1/6W
R066	1-247-870-00	CARBON	43K 5% 1/6W	R124	1-247-819-00	CARBON	330 5% 1/6W
R067	1-247-862-00	CARBON	20K 5% 1/6W	R125	1-247-831-00	CARBON	1K 5% 1/6W
R068	1-247-838-00	CARBON	2K 5% 1/6W	R126	1-247-831-00	CARBON	1K 5% 1/6W
R069	1-247-831-00	CARBON	1K 5% 1/6W	R127	1-247-835-00	CARBON	1.5K 5% 1/6W
R070	1-247-831-00	CARBON	1K 5% 1/6W	R128	1-247-831-00	CARBON	1K 5% 1/6W
R071	1-247-855-00	CARBON	10K 5% 1/6W	R129	1-247-867-00	CARBON	33K 5% 1/6W
R072	1-247-841-00	CARBON	2.7K 5% 1/6W	R130	1-247-842-00	CARBON	3K 5% 1/6W
R073	1-247-831-00	CARBON	1K 5% 1/6W	R131	1-247-841-00	CARBON	2.7K 5% 1/6W
R074	1-247-831-00	CARBON	1K 5% 1/6W	R132	1-247-887-00	CARBON	220K 5% 1/6W
R075	1-247-815-00	CARBON	220 5% 1/6W	R133	1-247-807-00	CARBON	100 5% 1/6W
R076	1-247-855-00	CARBON	10K 5% 1/6W	R134	1-247-851-00	CARBON	6.8K 5% 1/6W
R077	1-247-855-00	CARBON	10K 5% 1/6W	R135	1-247-883-00	CARBON	150K 5% 1/6W
R078	1-247-867-00	CARBON	33K 5% 1/6W	R136	1-247-879-00	CARBON	100K 5% 1/6W
R079	1-247-855-00	CARBON	10K 5% 1/6W	R137	1-247-857-00	CARBON	12K 5% 1/6W
R080	1-247-853-00	CARBON	8.2K 5% 1/6W	R138	1-247-861-00	CARBON	18K 5% 1/6W
R081	1-247-843-00	CARBON	3.3K 5% 1/6W	R139	1-247-841-00	CARBON	2.7K 5% 1/6W
R082	1-247-871-00	CARBON	47K 5% 1/6W	R140	1-247-867-00	CARBON	33K 5% 1/6W
R083	1-247-825-00	CARBON	560 5% 1/6W	R141	1-247-831-00	CARBON	1K 5% 1/6W
R084	1-247-831-00	CARBON	1K 5% 1/6W	R142	1-247-842-00	CARBON	3K 5% 1/6W
R085	1-247-803-00	CARBON	68 5% 1/6W	R143	1-247-855-00	CARBON	10K 5% 1/6W
R086	1-247-825-00	CARBON	560 5% 1/6W	R144	1-247-824-00	CARBON	510 5% 1/6W
R087	1-247-825-00	CARBON	560 5% 1/6W	R145	1-247-838-00	CARBON	2K 5% 1/6W
R088	1-247-801-00	CARBON	56 5% 1/6W	R146	1-247-829-00	CARBON	820 5% 1/6W
R091	1-247-824-00	CARBON	510 5% 1/6W	R147	1-247-855-00	CARBON	10K 5% 1/6W
R092	1-247-791-00	CARBON	22 5% 1/6W	R148	1-247-831-00	CARBON	1K 5% 1/6W
R093	1-247-806-00	CARBON	91 5% 1/6W	R149	1-247-819-00	CARBON	330 5% 1/6W
R094	1-247-869-00	CARBON	39K 5% 1/6W	R150	1-247-863-00	CARBON	22K 5% 1/6W
R095	1-247-872-00	CARBON	51K 5% 1/6W	R151	1-247-812-00	CARBON	160 5% 1/6W
R096	1-247-879-00	CARBON	100K 5% 1/6W	R152	1-247-829-00	CARBON	820 5% 1/6W
R097	1-247-882-00	CARBON	130K 5% 1/6W	R153	1-247-863-00	CARBON	22K 5% 1/6W
R098	1-247-890-00	CARBON	300K 5% 1/6W	R154	1-247-821-00	CARBON	390 5% 1/6W
R100	1-247-869-00	CARBON	39K 5% 1/6W	R155	1-247-839-00	CARBON	2.2K 5% 1/6W
R101	1-247-864-00	CARBON	24K 5% 1/6W	R156	1-247-839-00	CARBON	2.2K 5% 1/6W
R103	1-247-831-00	CARBON	1K 5% 1/6W	R157	1-247-837-00	CARBON	1.8K 5% 1/6W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R158	1-247-817-00	CARBON	270 5% 1/6W	R215	1-247-831-00	CARBON	1K 5% 1/6W
R159	1-247-810-00	CARBON	130 5% 1/6W	R216	1-247-832-00	CARBON	1.1K 5% 1/6W
R160	1-247-832-00	CARBON	1.1K 5% 1/6W	R217	1-247-831-00	CARBON	1K 5% 1/6W
R161	1-247-855-00	CARBON	10K 5% 1/6W	R218	1-247-831-00	CARBON	1K 5% 1/6W
R162	1-247-835-00	CARBON	1.5K 5% 1/6W	R219	1-247-866-00	CARBON	30K 5% 1/6W
R163	1-247-842-00	CARBON	3K 5% 1/6W	R220	1-247-874-00	CARBON	62K 5% 1/6W
R164	1-247-830-00	CARBON	910 5% 1/6W	R221	1-247-849-00	CARBON	5.6K 5% 1/6W
R165	1-247-834-00	CARBON	1.3K 5% 1/6W	R222	1-247-837-00	CARBON	1.8K 5% 1/6W
R166	1-247-818-00	CARBON	300 5% 1/6W	R223	1-247-837-00	CARBON	1.8K 5% 1/6W
R167	1-247-849-00	CARBON	5.6K 5% 1/6W	R231	1-247-867-00	CARBON	33K 5% 1/6W
R168	1-247-836-00	CARBON	1.6K 5% 1/6W	R235	1-247-831-00	CARBON	1K 5% 1/6W
R169	1-247-840-00	CARBON	2.4K 5% 1/6W	R236	1-247-853-00	CARBON	8.2K 5% 1/6W
R170	1-247-804-00	CARBON	75 5% 1/6W	R238	1-247-858-00	CARBON	13K 5% 1/6W
R171	1-247-901-00	CARBON	820K 5% 1/6W	R239	1-247-855-00	CARBON	10K 5% 1/6W
R172	1-247-857-00	CARBON	12K 5% 1/6W	R240	1-247-839-00	CARBON	2.2K 5% 1/6W
R173	1-247-861-00	CARBON	18K 5% 1/6W	R241	1-247-804-00	CARBON	75 5% 1/6W
R174	1-247-839-00	CARBON	2.2K 5% 1/6W	R242	1-247-879-00	CARBON	100K 5% 1/6W
R175	1-247-831-00	CARBON	1K 5% 1/6W	R243	1-247-855-00	CARBON	10K 5% 1/6W
R176	1-247-839-00	CARBON	2.2K 5% 1/6W	R244	1-247-851-00	CARBON	6.8K 5% 1/6W
R178	1-247-839-00	CARBON	2.2K 5% 1/6W	R245	1-247-879-00	CARBON	100K 5% 1/6W
R179	1-247-843-00	CARBON	3.3K 5% 1/6W	R246	1-247-871-00	CARBON	47K 5% 1/6W
R180	1-247-835-00	CARBON	1.5K 5% 1/6W	R247	1-247-871-00	CARBON	47K 5% 1/6W
R181	1-247-835-00	CARBON	1.5K 5% 1/6W	R248	1-247-818-00	CARBON	300 5% 1/6W
R185	1-247-843-00	CARBON	3.3K 5% 1/6W	R249	1-247-811-00	CARBON	150 5% 1/6W
R186	1-247-830-00	CARBON	910 5% 1/6W	R250	1-247-808-00	CARBON	110 5% 1/6W
R187	1-247-831-00	CARBON	1K 5% 1/6W	R251	1-247-838-00	CARBON	2K 5% 1/6W
R188	1-247-839-00	CARBON	2.2K 5% 1/6W	R252	1-247-803-00	CARBON	68 5% 1/6W
R189	1-247-834-00	CARBON	1.3K 5% 1/6W	R253	1-247-831-00	CARBON	1K 5% 1/6W
R190	1-247-834-00	CARBON	1.3K 5% 1/6W	R254	1-247-855-00	CARBON	10K 5% 1/6W
R191	1-247-831-00	CARBON	1K 5% 1/6W	R255	1-247-858-00	CARBON	13K 5% 1/6W
R192	1-247-831-00	CARBON	1K 5% 1/6W	R256	1-247-843-00	CARBON	3.3K 5% 1/6W
R193	1-247-855-00	CARBON	10K 5% 1/6W	R257	1-247-835-00	CARBON	1.5K 5% 1/6W
R194	1-247-819-00	CARBON	330 5% 1/6W	R258	1-247-852-00	CARBON	7.5K 5% 1/6W
R195	1-247-812-00	CARBON	160 5% 1/6W	R259	1-247-831-00	CARBON	1K 5% 1/6W
R196	1-247-863-00	CARBON	22K 5% 1/6W	R260	1-247-841-00	CARBON	2.7K 5% 1/6W
R197	1-247-863-00	CARBON	22K 5% 1/6W	R261	1-247-863-00	CARBON	22K 5% 1/6W
R198	1-247-829-00	CARBON	820 5% 1/6W	R262	1-247-859-00	CARBON	15K 5% 1/6W
R199	1-247-821-00	CARBON	390 5% 1/6W	R274	1-247-883-00	CARBON	150K 5% 1/6W
R200	1-247-839-00	CARBON	2.2K 5% 1/6W	R275	1-247-871-00	CARBON	47K 5% 1/6W
R201	1-247-837-00	CARBON	1.8K 5% 1/6W	R276	1-247-849-00	CARBON	5.6K 5% 1/6W
R202	1-247-831-00	CARBON	1K 5% 1/6W	R277	1-247-855-00	CARBON	10K 5% 1/6W
R203	1-247-815-00	CARBON	220 5% 1/6W	R281	1-247-890-00	CARBON	300K 5% 1/6W
R204	1-247-811-00	CARBON	150 5% 1/6W	R282	1-247-819-00	CARBON	330 5% 1/6W
R205	1-247-811-00	CARBON	150 5% 1/6W	R283	1-247-838-00	CARBON	2K 5% 1/6W
R206	1-247-834-00	CARBON	1.3K 5% 1/6W	R284	1-247-877-00	CARBON	82K 5% 1/6W
R207	1-247-874-00	CARBON	62K 5% 1/6W	R286	1-247-848-00	CARBON	5.1K 5% 1/6W
R208	1-247-874-00	CARBON	62K 5% 1/6W	R287	1-247-831-00	CARBON	1K 5% 1/6W
R209	1-247-833-00	CARBON	1.2K 5% 1/6W	R288	1-247-803-00	CARBON	68 5% 1/6W
R210	1-247-824-00	CARBON	510 5% 1/6W	R291	1-247-863-00	CARBON	22K 5% 1/6W
R211	1-247-831-00	CARBON	1K 5% 1/6W	R292	1-247-875-00	CARBON	68K 5% 1/6W
R212	1-247-824-00	CARBON	510 5% 1/6W	R293	1-247-819-00	CARBON	330 5% 1/6W
R213	1-247-829-00	CARBON	820 5% 1/6W	R294	1-247-818-00	CARBON	300 5% 1/6W
R214	1-247-831-00	CARBON	1K 5% 1/6W				

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R295	1-247-839-00	CARBON	2.2K 5% 1/6W	R414	1-247-847-00	CARBON	4.7K 5% 1/6W
R296	1-247-811-00	CARBON	150 5% 1/6W	R415	1-247-831-00	CARBON	1K 5% 1/6W
R297	1-247-831-00	CARBON	1K 5% 1/6W	R416	1-247-846-00	CARBON	4.3K 5% 1/6W
R298	1-247-894-00	CARBON	430K 5% 1/6W	R510	1-247-824-00	CARBON	510 5% 1/6W
R299	1-247-892-00	CARBON	360K 5% 1/6W	R511	1-247-867-00	CARBON	33K 5% 1/6W
R300	1-247-818-00	CARBON	300 5% 1/6W	R512	1-247-847-00	CARBON	4.7K 5% 1/6W
R301	1-247-855-00	CARBON	10K 5% 1/6W	R513	1-247-863-00	CARBON	22K 5% 1/6W
R302	1-247-819-00	CARBON	330 5% 1/6W	R514	1-247-821-00	CARBON	390 5% 1/6W
R303	1-247-819-00	CARBON	330 5% 1/6W	R515	1-247-839-00	CARBON	2.2K 5% 1/6W
R304	1-247-847-00	CARBON	4.7K 5% 1/6W	R516	1-247-821-00	CARBON	390 5% 1/6W
R305	1-247-835-00	CARBON	1.5K 5% 1/6W	R517	1-247-821-00	CARBON	390 5% 1/6W
R312	1-247-847-00	CARBON	4.7K 5% 1/6W	R518	1-247-821-00	CARBON	390 5% 1/6W
R313	1-247-823-00	CARBON	470 5% 1/6W	R519	1-247-821-00	CARBON	390 5% 1/6W
R314	1-247-871-00	CARBON	47K 5% 1/6W	R520	1-247-839-00	CARBON	2.2K 5% 1/6W
R315	1-247-855-00	CARBON	10K 5% 1/6W	R521	1-247-821-00	CARBON	390 5% 1/6W
R316	1-247-807-00	CARBON	100 5% 1/6W	R522	1-247-839-00	CARBON	2.2K 5% 1/6W
R317	1-247-807-00	CARBON	100 5% 1/6W	R525	1-247-843-00	CARBON	3.3K 5% 1/6W
R320	1-247-878-00	CARBON	91K 5% 1/6W	R603	1-247-855-00	CARBON	10K 5% 1/6W
R321	1-247-887-00	CARBON	220K 5% 1/6W	<u>VARIABLE RESISTOR</u>			
R325	1-247-807-00	CARBON	100 5% 1/6W	RV001	1-228-989-00	RES, ADJ, METAL GLAZE 470	
R326	1-247-852-00	CARBON	7.5K 5% 1/6W	RV002	1-228-748-00	RES, ADJ, CARBON 10K	
R327	1-247-863-00	CARBON	22K 5% 1/6W	RV003	1-228-750-00	RES, ADJ, CARBON 47K	
R328	1-247-848-00	CARBON	5.1K 5% 1/6W	RV004	1-228-989-00	RES, ADJ, METAL GLAZE 470	
R331	1-247-852-00	CARBON	7.5K 5% 1/6W	RV005	1-228-750-00	RES, ADJ, CARBON 47K	
R342	1-247-807-00	CARBON	100 5% 1/6W	RV006	1-228-749-00	RES, ADJ, CARBON 22K	
R345	1-247-867-00	CARBON	33K 5% 1/6W	RV007	1-228-748-00	RES, ADJ, CARBON 10K	
R346	1-247-847-00	CARBON	4.7K 5% 1/6W	RV008	1-228-745-00	RES, ADJ, CARBON 1K	
R351	1-247-815-00	CARBON	220 5% 1/6W	RV009	1-228-996-00	RES, ADJ, METAL GLAZE 47K	
R352	1-247-855-00	CARBON	10K 5% 1/6W	RV010	1-228-749-00	RES, ADJ, CARBON 22K	
R353	1-247-831-00	CARBON	1K 5% 1/6W	RV012	1-228-750-00	RES, ADJ, CARBON 47K	
R354	1-247-815-00	CARBON	220 5% 1/6W	RV013	1-228-750-00	RES, ADJ, CARBON 47K	
R355	1-247-840-00	CARBON	2.4K 5% 1/6W	RV014	1-228-748-00	RES, ADJ, CARBON 10K	
R356	1-247-840-00	CARBON	2.4K 5% 1/6W	RV015	1-228-989-00	RES, ADJ, METAL GLAZE 470	
R357	1-247-829-00	CARBON	820 5% 1/6W	RV016	1-228-745-00	RES, ADJ, CARBON 1K	
R358	1-247-855-00	CARBON	10K 5% 1/6W	RV017	1-228-753-00	RES, ADJ, CARBON 470K	
R359	1-247-839-00	CARBON	2.2K 5% 1/6W	RV019	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
R370	1-247-790-00	CARBON	20 5% 1/6W	RV020	1-228-745-00	RES, ADJ, CARBON 1K	
R401	1-247-810-00	CARBON	130 5% 1/6W	RV021	1-228-750-00	RES, ADJ, CARBON 47K	
R402	1-247-808-00	CARBON	110 5% 1/6W	RV401	1-228-994-00	RES, ADJ, METAL GLAZE 10K	
R403	1-247-867-00	CARBON	33K 5% 1/6W	RV501	1-228-744-00	RES, ADJ, CARBON 470	
R404	1-247-871-00	CARBON	47K 5% 1/6W	<u>COIL</u>			
R405	1-247-831-00	CARBON	1K 5% 1/6W	T001	1-426-093-00	COIL, REC C BPT	
R406	1-247-832-00	CARBON	1.1K 5% 1/6W	<u>CRYSTAL</u>			
R407	1-247-832-00	CARBON	1.1K 5% 1/6W	X001	1-527-345-00	CRYSTAL, OSC	
R408	1-247-849-00	CARBON	5.6K 5% 1/6W	*****			
R409	1-247-831-00	CARBON	1K 5% 1/6W				
R410	1-247-831-00	CARBON	1K 5% 1/6W				
R411	1-247-847-00	CARBON	4.7K 5% 1/6W				
R412	1-247-828-00	CARBON	750 5% 1/6W				
R413	1-247-812-00	CARBON	160 5% 1/6W				

When indicating parts by reference number, please include the board name.

RP-17

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
♣:A-6711-528-A	RP-17	BOARD, COMPLETE *****		C053	1-101-004-00	CERAMIC	50V
♣:3-684-081-01	CASE (A) (MAIN), SHIELD, RP			C054	1-101-004-00	CERAMIC	50V
♣:3-684-082-02	LID, UPPER, RP SHIELD CASE (A)			C055	1-101-004-00	CERAMIC	50V
♣:3-684-083-02	LID, BOTTOM, RP SHIELD CASE (A)			C056	1-161-025-00	CERAMIC	10% 25V
♣:3-684-084-01	CASE (B) (MAIN), SHIELD, RP			C057	1-123-333-00	ELECT	20% 16V
♣:3-684-085-01	LID, UPPER, RP SHIELD CASE (B)			C058	1-161-025-00	CERAMIC	10% 25V
♣:3-684-086-01	LID, BOTTOM, RP SHIELD CASE (B)			C061	1-102-128-00	CERAMIC	10% 50V
<u>CAPACITOR</u>				C062	1-101-004-00	CERAMIC	50V
C003	1-101-004-00	CERAMIC	50V	C063	1-161-025-00	CERAMIC	10% 25V
C004	1-123-356-00	ELECT	20% 16V	C064	1-161-025-00	CERAMIC	10% 25V
C005	1-123-379-00	ELECT	20% 50V	C101	1-161-025-00	CERAMIC	10% 25V
C006	1-108-579-00	MYLAR	5% 50V	C102	1-101-004-00	CERAMIC	50V
C007	1-123-356-00	ELECT	20% 16V	C103	1-161-025-00	CERAMIC	10% 25V
C008	1-101-004-00	CERAMIC	50V	C104	1-101-004-00	CERAMIC	50V
C012	1-101-004-00	CERAMIC	50V	C105	1-161-025-00	CERAMIC	10% 25V
C013	1-102-820-00	CERAMIC	5% 50V	C106	1-102-977-00	CERAMIC	5% 50V
C014	1-123-356-00	ELECT	20% 16V	C107	1-123-356-00	ELECT	20% 16V
C017	1-102-973-00	CERAMIC	5% 50V	C108	1-101-004-00	CERAMIC	50V
C018	1-102-973-00	CERAMIC	5% 50V	C109	1-161-025-00	CERAMIC	10% 25V
C019	1-102-824-00	CERAMIC	5% 50V	C110	1-101-004-00	CERAMIC	50V
C020	1-102-120-00	CERAMIC	10% 50V	C111	1-101-004-00	CERAMIC	50V
C021	1-101-880-00	CERAMIC	5% 50V	C112	1-161-025-00	CERAMIC	10% 25V
C022	1-101-880-00	CERAMIC	5% 50V	C113	1-161-025-00	CERAMIC	10% 25V
C023	1-123-333-00	ELECT	20% 16V	C114	1-102-978-00	CERAMIC	5% 50V
C024	1-123-356-00	ELECT	20% 16V	C115	1-101-004-00	CERAMIC	50V
C025	1-108-579-00	MYLAR	5% 50V	C116	1-161-025-00	CERAMIC	10% 25V
C026	1-123-379-00	ELECT	20% 50V	C117	1-161-025-00	CERAMIC	10% 25V
C027	1-123-356-00	ELECT	20% 16V	C118	1-123-380-00	ELECT	20% 50V
C028	1-101-004-00	CERAMIC	50V	C119	1-101-004-00	CERAMIC	50V
C030	1-101-004-00	CERAMIC	50V	C120	1-123-380-00	ELECT	20% 50V
C033	1-102-977-00	CERAMIC	5% 50V	C121	1-102-531-00	CERAMIC	5% 50V
C034	1-123-332-00	ELECT	20% 16V	C122	1-161-025-00	CERAMIC	10% 25V
C035	1-101-004-00	CERAMIC	50V	C123	1-123-318-00	ELECT	20% 16V
C036	1-123-356-00	ELECT	20% 16V	C124	1-101-004-00	CERAMIC	50V
C037	1-101-004-00	CERAMIC	50V	C125	1-101-004-00	CERAMIC	50V
C039	1-101-006-00	CERAMIC	50V	C126	1-161-025-00	CERAMIC	10% 25V
C040	1-101-004-00	CERAMIC	50V	C127	1-123-318-00	ELECT	20% 16V
C041	1-102-960-00	CERAMIC	5% 50V	C128	1-101-004-00	CERAMIC	50V
C042	1-102-960-00	CERAMIC	5% 50V	C129	1-101-004-00	CERAMIC	50V
C043	1-123-318-00	ELECT	20% 16V	C130	1-161-025-00	CERAMIC	10% 25V
C044	1-101-004-00	CERAMIC	50V	C201	1-123-356-00	ELECT	20% 16V
C045	1-102-514-00	CERAMIC	5% 50V	C202	1-123-356-00	ELECT	20% 16V
C046	1-101-004-00	CERAMIC	50V	C203	1-123-356-00	ELECT	20% 16V
C047	1-101-004-00	CERAMIC	50V	C204	1-123-356-00	ELECT	20% 16V
C048	1-101-004-00	CERAMIC	50V	C205	1-123-356-00	ELECT	20% 16V
C049	1-101-004-00	CERAMIC	50V	C206	1-123-380-00	ELECT	20% 50V
C050	1-101-004-00	CERAMIC	50V	C207	1-123-318-00	ELECT	20% 16V
C051	1-101-004-00	CERAMIC	50V	C208	1-123-356-00	ELECT	20% 16V
C052	1-101-004-00	CERAMIC	50V	C209	1-123-356-00	ELECT	20% 16V
				C210	1-102-121-00	CERAMIC	10% 50V
				C211	1-123-321-00	ELECT	20% 16V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description
<u>CONNECTOR</u>		
CN001	1-564-031-00	PIN, CONNECTOR 6P
CN002	1-564-030-00	PIN, CONNECTOR 5P
CN003	1-564-028-00	PIN, CONNECTOR 3P
CN101	1-564-031-00	PIN, CONNECTOR 6P
CN102	1-564-037-11	PIN, CONNECTOR 12P
CN103	1-564-030-21	PIN, CONNECTOR 5P
CN202	1-564-030-00	PIN, CONNECTOR 5P

<u>DIODE</u>		
D001	8-719-901-33	DIODE 1SS133
D002	8-719-901-33	DIODE 1SS133
D101	8-719-911-19	DIODE 1SS119
D102	8-719-911-19	DIODE 1SS119
D103	8-719-911-19	DIODE 1SS119
D104	8-719-911-19	DIODE 1SS119
D105	8-719-911-19	DIODE 1SS119
D106	8-719-911-19	DIODE 1SS119
D201	8-719-911-19	DIODE 1SS119
D202	8-719-911-19	DIODE 1SS119
D203	8-719-911-19	DIODE 1SS119

<u>IC</u>		
IC001	8-752-004-50	IC CX20045
IC002	8-759-200-60	IC TA7060AP
IC201	8-759-145-58	IC UPC4558C

<u>COIL</u>		
L001	1-408-876-00	MICRO INDUCTOR 0.18UH
L002	1-408-427-00	MICRO INDUCTOR 330UH
L003	1-408-429-00	MICRO INDUCTOR 470UH
L006	1-408-421-00	MICRO INDUCTOR 100UH
L009	1-408-422-00	MICRO INDUCTOR 120UH
L010	1-408-411-00	MICRO INDUCTOR 15UH
L011	1-408-411-00	MICRO INDUCTOR 15UH
L012	1-408-878-00	MICRO INDUCTOR 0.33UH
L013	1-408-427-00	MICRO INDUCTOR 330UH
L014	1-408-429-00	MICRO INDUCTOR 470UH
L016	1-408-429-00	MICRO INDUCTOR 470UH
L017	1-408-415-00	MICRO INDUCTOR 33UH
L020	1-407-495-00	MICRO INDUCTOR 1.8MMH
L021	1-408-429-00	MICRO INDUCTOR 470UH
L101	1-408-405-00	MICRO INDUCTOR 4.7UH
L102	1-408-421-00	MICRO INDUCTOR 100UH
L103	1-408-405-00	MICRO INDUCTOR 4.7UH
L104	1-408-421-00	MICRO INDUCTOR 100UH
L105	1-408-421-00	MICRO INDUCTOR 100UH

Ref.No	Part No.	Description	Remark
<u>TRANSISTOR</u>			
Q001	=>8-729-245-83	TRANSISTOR 2SC2458	
Q002	=>8-729-245-83	TRANSISTOR 2SC2458	
Q003	=>8-729-177-43	TRANSISTOR 2SD774	
Q004	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q005	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q006	=>8-729-245-83	TRANSISTOR 2SC2458	
Q007	=>8-729-245-83	TRANSISTOR 2SC2458	
Q008	=>8-729-245-83	TRANSISTOR 2SC2458	
Q101	=>8-729-245-83	TRANSISTOR 2SC2458	
Q102	8-729-800-42	TRANSISTOR 2SK152	
Q103	=>8-729-245-83	TRANSISTOR 2SC2458	
Q104	8-729-384-46	TRANSISTOR 2SA844-C	
Q105	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q106	=>8-729-245-83	TRANSISTOR 2SC2458	
Q107	8-729-800-42	TRANSISTOR 2SK152	
Q108	8-729-384-46	TRANSISTOR 2SA844-C	
Q109	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q110	=>8-729-245-83	TRANSISTOR 2SC2458	
Q111	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q112	8-729-384-46	TRANSISTOR 2SA844-C	
Q113	8-729-113-33	TRANSISTOR 2SB733-4	
Q114	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q115	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q201	=>8-729-245-83	TRANSISTOR 2SC2458	

<u>RESISTOR</u>					
R001	1-247-831-00	CARBON	1K	5%	1/6W
R002	1-247-816-00	CARBON	240	5%	1/6W
R004	1-247-857-00	CARBON	12K	5%	1/6W
R009	1-247-832-00	CARBON	1.1K	5%	1/6W
R010	1-247-829-00	CARBON	820	5%	1/6W
R012	1-247-831-00	CARBON	1K	5%	1/6W
R013	1-247-831-00	CARBON	1K	5%	1/6W
R014	1-247-835-00	CARBON	1.5K	5%	1/6W
R015	1-247-855-00	CARBON	10K	5%	1/6W
R016	1-247-879-00	CARBON	100K	5%	1/6W
R017	1-247-835-00	CARBON	1.5K	5%	1/6W
R020	1-247-816-00	CARBON	240	5%	1/6W
R022	1-247-866-00	CARBON	30K	5%	1/6W
R023	1-247-862-00	CARBON	20K	5%	1/6W
R024	1-247-824-00	CARBON	510	5%	1/6W
R025	1-247-824-00	CARBON	510	5%	1/6W
R026	1-247-823-00	CARBON	470	5%	1/6W
R028	1-247-824-00	CARBON	510	5%	1/6W
R036	1-247-836-00	CARBON	1.6K	5%	1/6W
R037	1-247-864-00	CARBON	24K	5%	1/6W
R038	1-247-866-00	CARBON	30K	5%	1/6W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R039	△ 1-212-857-00	FUSIBLE	10 5% 1/4W F	R132	△ 1-211-608-00	CARBON	56 5% 1/2W F
R040	1-247-831-00	CARBON	1K 5% 1/6W	R133	1-247-823-00	CARBON	470 5% 1/6W
R042	1-247-831-00	CARBON	1K 5% 1/6W	R134	1-247-826-00	CARBON	620 5% 1/6W
R043	1-247-829-00	CARBON	820 5% 1/6W	R135	1-247-079-00	CARBON	4.7 5% 1/4W
				R136	1-247-807-00	CARBON	100 5% 1/6W
R045	1-247-807-00	CARBON	100 5% 1/6W				
R048	1-247-819-00	CARBON	330 5% 1/6W	R137	1-247-857-00	CARBON	12K 5% 1/6W
R049	1-247-819-00	CARBON	330 5% 1/6W	R138	1-247-827-00	CARBON	680 5% 1/6W
R050	1-247-831-00	CARBON	1K 5% 1/6W	R139	1-247-807-00	CARBON	100 5% 1/6W
R051	1-247-857-00	CARBON	12K 5% 1/6W	R140	1-247-807-00	CARBON	100 5% 1/6W
				R141	1-247-831-00	CARBON	1K 5% 1/6W
R052	1-247-858-00	CARBON	13K 5% 1/6W				
R053	1-247-831-00	CARBON	1K 5% 1/6W	R142	1-247-849-00	CARBON	5.6K 5% 1/6W
R054	1-247-831-00	CARBON	1K 5% 1/6W	R143	1-247-849-00	CARBON	5.6K 5% 1/6W
R055	1-247-825-00	CARBON	560 5% 1/6W	R144	1-247-871-00	CARBON	47K 5% 1/6W
R056	1-247-831-00	CARBON	1K 5% 1/6W	R145	1-247-850-00	CARBON	6.2K 5% 1/6W
				R146	1-247-842-00	CARBON	3K 5% 1/6W
R057	1-247-851-00	CARBON	6.8K 5% 1/6W	R147	1-247-849-00	CARBON	5.6K 5% 1/6W
R058	1-247-843-00	CARBON	3.3K 5% 1/6W	R148	1-247-871-00	CARBON	47K 5% 1/6W
R059	1-247-841-00	CARBON	2.7K 5% 1/6W	R149	1-247-850-00	CARBON	6.2K 5% 1/6W
R060	1-247-831-00	CARBON	1K 5% 1/6W				
R061	1-247-829-00	CARBON	820 5% 1/6W	R150	1-247-842-00	CARBON	3K 5% 1/6W
				R201	1-247-855-00	CARBON	10K 5% 1/6W
R101	1-247-849-00	CARBON	5.6K 5% 1/6W	R202	1-247-879-00	CARBON	100K 5% 1/6W
R102	1-247-831-00	CARBON	1K 5% 1/6W	R203	1-247-879-00	CARBON	100K 5% 1/6W
R103	1-247-855-00	CARBON	10K 5% 1/6W	R204	1-247-886-00	CARBON	200K 5% 1/6W
R104	1-247-855-00	CARBON	10K 5% 1/6W				
				R205	1-247-873-00	CARBON	56K 5% 1/6W
R105	1-247-821-00	CARBON	390 5% 1/6W	R206	1-247-855-00	CARBON	10K 5% 1/6W
R106	1-247-818-00	CARBON	300 5% 1/6W	R207	1-247-883-00	CARBON	150K 5% 1/6W
R107	1-247-810-00	CARBON	130 5% 1/6W	R208	1-247-866-00	CARBON	30K 5% 1/6W
R109	△ 1-212-857-00	FUSIBLE	10 5% 1/4W F	R209	1-247-831-00	CARBON	1K 5% 1/6W
R110	1-247-831-00	CARBON	1K 5% 1/6W				
				R210	1-247-879-00	CARBON	100K 5% 1/6W
R111	1-247-807-00	CARBON	100 5% 1/6W	R211	1-247-871-00	CARBON	47K 5% 1/6W
R112	1-247-807-00	CARBON	100 5% 1/6W	R212	1-247-859-00	CARBON	15K 5% 1/6W
R113	1-247-849-00	CARBON	5.6K 5% 1/6W	R213	△ 1-212-857-00	FUSIBLE	10 5% 1/4W F
R114	1-247-818-00	CARBON	300 5% 1/6W				
R115	1-247-799-00	CARBON	47 5% 1/6W				
R116	1-247-827-00	CARBON	680 5% 1/6W				
R117	1-247-821-00	CARBON	390 5% 1/6W				
R118	1-247-807-00	CARBON	100 5% 1/6W				
R119	1-247-855-00	CARBON	10K 5% 1/6W				
R120	1-247-855-00	CARBON	10K 5% 1/6W				
R122	1-247-831-00	CARBON	1K 5% 1/6W				
R123	1-247-807-00	CARBON	100 5% 1/6W				
R124	1-247-839-00	CARBON	2.2K 5% 1/6W				
R125	1-247-869-00	CARBON	39K 5% 1/6W				
R126	1-247-831-00	CARBON	1K 5% 1/6W				
R127	1-247-853-00	CARBON	8.2K 5% 1/6W				
R128	1-247-855-00	CARBON	10K 5% 1/6W				
R129	1-247-820-00	CARBON	360 5% 1/6W				
R130	1-247-819-00	CARBON	330 5% 1/6W				
R131	1-247-799-00	CARBON	47 5% 1/6W				

VARIABLE RESISTOR

RV001	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV002	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV003	1-228-745-00	RES, ADJ, CARBON 1K
RV004	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV101	1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV102	1-228-990-00	RES, ADJ, METAL GLAZE 1K

TRANSFORMER

T101	1-427-546-11	TRANSFORMER, I/O
T102	1-427-546-11	TRANSFORMER, I/O

THERMISTOR

TH201	1-800-202-XX	THERMISTOR S-10K
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The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
The parts for AF-3 board whose end of part No. is -13.				C054	1-102-822-00	CERAMIC 390PF	5% 50V
▲:A-6713-200-A	AF-3 BOARD, COMPLETE	*****		C055	1-161-025-00	CERAMIC 0.1MF	10% 25V
▲:3-684-072-01	LID, BOTTOM, AF SHIELD CASE(S)			C057	1-102-973-00	CERAMIC 100PF	5% 50V
▲:3-684-087-01	CASE (S) (MAIN), SHIELD, AF			C058	1-101-884-00	CERAMIC 56PF	5% 50V
3-701-748-00	CLAMP			C059	1-123-356-00	ELECT 10MF	20% 16V
B.P.F				C060	1-123-381-00	ELECT 2.2MF	20% 50V
BPF001 1-235-367-11	B.P.F			C062	1-123-381-00	ELECT 2.2MF	20% 50V
BPF002 1-235-367-11	B.P.F			C063	1-161-025-00	CERAMIC 0.1MF	10% 25V
BPF003 1-235-366-11	B.P.F			C064	1-161-025-00	CERAMIC 0.1MF	10% 25V
BPF004 1-235-366-11	B.P.F			C065	1-123-332-00	ELECT 47MF	20% 16V
CAPACITOR				C069	1-161-025-00	CERAMIC 0.1MF	10% 25V
C001 1-123-356-00	ELECT 10MF	20%	16V	C070	1-161-025-00	CERAMIC 0.1MF	10% 25V
C002 1-161-025-00	CERAMIC 0.1MF	10%	25V	C071	1-161-025-00	CERAMIC 0.1MF	10% 25V
C003 1-161-025-00	CERAMIC 0.1MF	10%	25V	C072	1-102-822-00	CERAMIC 390PF	5% 50V
C004 1-161-025-00	CERAMIC 0.1MF	10%	25V	C073	1-161-025-00	CERAMIC 0.1MF	10% 25V
C006 1-161-025-00	CERAMIC 0.1MF	10%	25V	C075	1-102-973-00	CERAMIC 100PF	5% 50V
C007 1-123-332-00	ELECT 47MF	20%	16V	C076	1-101-884-00	CERAMIC 56PF	5% 50V
C008 1-161-025-00	CERAMIC 0.1MF	10%	25V	C078	1-123-333-00	ELECT 100MF	20% 16V
C010 1-123-306-00	ELECT 47MF	20%	10V	C080	1-161-025-00	CERAMIC 0.1MF	10% 25V
C011 1-123-306-00	ELECT 47MF	20%	10V	C081	1-108-561-00	MYLAR 0.0018MF	5% 50V
C012 1-161-025-00	CERAMIC 0.1MF	10%	25V	C082	1-108-565-00	MYLAR 0.0027MF	5% 50V
C013 1-123-306-00	ELECT 47MF	20%	6.3V	C083	1-108-569-00	MYLAR 0.0039MF	5% 50V
C014 1-161-025-00	CERAMIC 0.1MF	10%	25V	C084	1-123-356-00	ELECT 10MF	20% 16V
C015 1-161-025-00	CERAMIC 0.1MF	10%	25V	C086	1-123-307-00	ELECT 100MF	20% 10V
C016 1-102-519-00	CERAMIC 36PF	5%	50V	C087	1-161-013-00	CERAMIC 0.01MF	10% 25V
C017 1-123-332-00	ELECT 47MF	20%	16V	C088	1-123-307-00	ELECT 100MF	20% 10V
C018 1-161-025-00	CERAMIC 0.1MF	10%	25V	C089	1-123-332-00	ELECT 47MF	20% 16V
C020 1-161-025-00	CERAMIC 0.1MF	10%	25V	C090	1-123-332-00	ELECT 47MF	20% 16V
C021 1-161-025-00	CERAMIC 0.1MF	10%	25V	C091	1-123-356-00	ELECT 10MF	20% 16V
C023 1-123-356-00	ELECT 10MF	20%	16V	C092	1-102-958-00	CERAMIC 20PF	5% 50V
C025 1-102-973-00	CERAMIC 100PF	5%	50V	C093	1-130-485-00	MYLAR 0.015MF	5% 50V
C026 1-101-884-00	CERAMIC 56PF	5%	50V	C095	1-130-485-00	MYLAR 0.015MF	5% 50V
C027 1-161-025-00	CERAMIC 0.1MF	10%	25V	C096	1-130-494-11	MYLAR 0.082MF	5% 50V
C028 1-123-381-00	ELECT 2.2MF	20%	50V	C098	1-130-475-00	MYLAR 0.0022MF	5% 50V
C030 1-123-381-00	ELECT 2.2MF	20%	50V	C099	1-102-936-00	CERAMIC 3PF	0.25PF 50V
C031 1-161-025-00	CERAMIC 0.1MF	10%	25V	C100	1-130-469-00	MYLAR 680PF	5% 50V
C032 1-123-332-00	ELECT 47MF	20%	16V	C101	1-108-590-00	MYLAR 0.03MF	5% 50V
C033 1-161-025-00	CERAMIC 0.1MF	10%	25V	C102	1-131-383-00	TANTALUM 10MF	10% 6.3V
C034 1-102-519-00	CERAMIC 36PF	5%	50V	C103	1-131-347-00	TANTALUM 1MF	20% 16V
C035 1-161-025-00	CERAMIC 0.1MF	10%	25V	C105	1-123-307-00	ELECT 100MF	20% 10V
C036 1-161-025-00	CERAMIC 0.1MF	10%	25V	C106	1-161-013-00	CERAMIC 0.01MF	10% 25V
C038 1-102-973-00	CERAMIC 100PF	5%	50V	C107	1-130-497-00	MYLAR 0.15MF	5% 50V
C039 1-101-884-00	CERAMIC 56PF	5%	50V	C109	1-108-569-00	MYLAR 0.0039MF	5% 50V
C041 1-123-356-00	ELECT 10MF	20%	16V	C110	1-108-565-00	MYLAR 0.0027MF	5% 50V
C042 1-123-333-00	ELECT 100MF	20%	16V	C111	1-108-561-00	MYLAR 0.0018MF	5% 50V
C046 1-161-025-00	CERAMIC 0.1MF	10%	25V	C115	1-123-356-00	ELECT 10MF	20% 16V
C048 1-123-333-00	ELECT 100MF	20%	16V	C116	1-123-307-00	ELECT 100MF	20% 10V
C050 1-123-332-00	ELECT 47MF	20%	16V	C117	1-123-332-00	ELECT 47MF	20% 16V
C051 1-161-025-00	CERAMIC 0.1MF	10%	25V	C118	1-123-332-00	ELECT 47MF	20% 16V
C052 1-161-025-00	CERAMIC 0.1MF	10%	25V	C119	1-102-958-00	CERAMIC 20PF	5% 50V
C053 1-161-025-00	CERAMIC 0.1MF	10%	25V	C120	1-130-485-00	MYLAR 0.015MF	5% 50V
				C121	1-102-936-00	CERAMIC 3PF	0.25PF 50V
				C122	1-130-469-00	MYLAR 680PF	5% 50V
				C123	1-102-936-00	CERAMIC 3PF	0.25PF 50V
				C124	1-130-497-00	MYLAR 0.15MF	5% 50V
				C125	1-131-383-00	TANTALUM 10MF	10% 6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description			Remark
C126	1-131-347-00	TANTALUM	1MF	20%	16V	C196	1-123-332-00	ELECT	47MF	20%	16V
C127	1-108-590-00	MYLAR	0.03MF	5%	50V	C197	1-102-625-61	CERAMIC	100PF	5%	50V
C128	1-130-475-00	MYLAR	0.0022MF	5%	50V	C198	1-161-013-00	CERAMIC	0.01MF	10%	25V
C130	1-130-494-11	MYLAR	0.082MF	5%	50V	C199	1-102-517-00	CERAMIC	30PF	5%	50V
C131	1-130-485-00	MYLAR	0.015MF	5%	50V	C200	1-102-531-00	CERAMIC	150PF	5%	50V
C132	1-123-356-00	ELECT	10MF	20%	16V	C201	1-102-531-00	CERAMIC	150PF	5%	50V
C133	1-161-013-00	CERAMIC	0.01MF	10%	25V	C202	1-161-013-00	CERAMIC	0.01MF	10%	25V
C134	1-123-330-00	ELECT	22MF	20%	16V	C203	1-161-013-00	CERAMIC	0.01MF	10%	25V
C143	1-123-332-00	ELECT	47MF	20%	16V	C208	1-161-025-00	CERAMIC	0.1MF	10%	25V
C144	1-123-330-00	ELECT	22MF	20%	16V	C209	1-123-356-00	ELECT	10MF	20%	16V
C146	1-123-332-00	ELECT	47MF	20%	16V	C211	1-161-025-00	CERAMIC	0.1MF	10%	25V
C147	1-123-330-00	ELECT	22MF	20%	16V	C213	1-123-332-00	ELECT	47MF	20%	16V
C150	1-123-332-00	ELECT	47MF	20%	16V	C216	1-123-381-00	ELECT	2.2MF	20%	50V
C151	1-123-381-00	ELECT	2.2MF	20%	50V	C217	1-123-381-00	ELECT	2.2MF	20%	50V
C152	1-102-973-00	CERAMIC	100PF	5%	50V	C221	1-123-330-00	ELECT	22MF	20%	16V
C153	1-123-332-00	ELECT	47MF	20%	16V	C222	1-123-330-00	ELECT	22MF	20%	16V
C154	1-123-381-00	ELECT	2.2MF	20%	50V	C223	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C155	1-102-973-00	CERAMIC	100PF	5%	50V	C224	1-123-380-00	ELECT	1MF	20%	50V
C156	1-123-330-00	ELECT	22MF	20%	16V	C225	1-161-013-00	CERAMIC	0.01MF	10%	25V
C157	1-123-330-00	ELECT	22MF	20%	16V	C226	1-161-013-00	CERAMIC	0.01MF	10%	25V
C158	1-123-330-00	ELECT	22MF	20%	16V	C227	1-161-013-00	CERAMIC	0.01MF	10%	25V
C159	1-123-318-00	ELECT	33MF	20%	16V	C229	1-130-471-00	MYLAR	0.001MF	5%	50V
C160	1-123-332-00	ELECT	47MF	20%	16V	C232	1-130-471-00	MYLAR	0.001MF	5%	50V
C161	1-123-330-00	ELECT	22MF	20%	16V	C235	1-161-013-00	CERAMIC	0.01MF	10%	25V
C162	1-123-318-00	ELECT	33MF	20%	16V	C236	1-130-491-00	MYLAR	0.047MF	5%	50V
C163	1-123-356-00	ELECT	10MF	20%	16V	C237	1-130-491-00	MYLAR	0.047MF	5%	50V
C164	1-123-356-00	ELECT	10MF	20%	16V	C238	1-123-330-00	ELECT	22MF	20%	16V
C165	1-123-330-00	ELECT	22MF	20%	16V	C240	1-161-025-00	CERAMIC	0.1MF	10%	25V
C166	1-123-356-00	ELECT	10MF	20%	16V	C241	1-123-356-00	ELECT	10MF	20%	16V
C167	1-123-380-00	ELECT	1MF	20%	50V	C501	1-124-233-00	ELECT	10MF	20%	16V
C168	1-123-356-00	ELECT	10MF	20%	16V	C701	1-123-356-00	ELECT	10MF	20%	16V
C169	1-123-330-00	ELECT	22MF	20%	16V	C702	1-123-356-00	ELECT	10MF	20%	16V
C170	1-123-380-00	ELECT	1MF	20%	50V	C704	1-123-322-00	ELECT	330MF	20%	16V
C171	1-161-025-00	CERAMIC	0.1MF	10%	25V	C706	1-124-231-00	ELECT	4.7MF	20%	16V
C173	1-161-013-00	CERAMIC	0.01MF	10%	25V	C709	1-123-381-00	ELECT	2.2MF	20%	50V
C175	1-123-332-00	ELECT	47MF	20%	16V	C710	1-130-469-00	MYLAR	680PF	5%	50V
C176	1-102-976-00	CERAMIC	180PF	5%	50V	C711	1-130-469-00	MYLAR	680PF	5%	50V
C177	1-161-013-00	CERAMIC	0.01MF	10%	25V	C712	1-123-332-00	ELECT	47MF	20%	16V
C178	1-102-522-00	CERAMIC	51PF	5%	50V	C713	1-123-332-00	ELECT	47MF	20%	16V
C179	1-102-978-00	CERAMIC	220PF	5%	50V	C714	1-130-469-00	MYLAR	680PF	5%	50V
C180	1-102-978-00	CERAMIC	220PF	5%	50V	C715	1-130-469-00	MYLAR	680PF	5%	50V
C181	1-161-013-00	CERAMIC	0.01MF	10%	25V	C722	1-124-231-00	ELECT	4.7MF	20%	16V
C182	1-123-332-00	ELECT	47MF	20%	16V	C724	1-123-380-00	ELECT	1MF	20%	50V
C183	1-123-332-00	ELECT	47MF	20%	16V	C725	1-123-380-00	ELECT	1MF	20%	50V
C184	1-102-529-00	CERAMIC	100PF	5%	50V	C726	1-161-039-00	CERAMIC	0.001MF	10%	25V
C185	1-123-332-00	ELECT	47MF	20%	16V	C727	1-102-824-00	CERAMIC	470PF	5%	50V
C186	1-123-332-00	ELECT	47MF	20%	16V	C728	1-102-824-00	CERAMIC	470PF	5%	50V
C187	1-161-025-00	CERAMIC	0.1MF	10%	25V	C731	1-123-332-00	ELECT	47MF	20%	16V
C189	1-161-025-00	CERAMIC	0.1MF	10%	25V	C732	1-123-332-00	ELECT	47MF	20%	16V
C190	1-123-332-00	ELECT	47MF	20%	16V	C733	1-161-013-00	CERAMIC	0.01MF	10%	25V
C191	1-161-025-00	CERAMIC	0.1MF	10%	25V	C734	1-124-168-00	ELECT	100MF	20%	16V
C192	1-123-332-00	ELECT	47MF	20%	16V	C735	1-123-381-00	ELECT	2.2MF	20%	50V
C193	1-102-529-00	CERAMIC	100PF	5%	50V	C736	1-123-381-00	ELECT	2.2MF	20%	50V
C194	1-123-332-00	ELECT	47MF	20%	16V	C737	1-161-055-00	CERAMIC	0.022MF	10%	25V
C195	1-123-332-00	ELECT	47MF	20%	16V						

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C738	1-123-233-00	ELECT 10MF	20% 16V
C739	1-161-057-00	CERAMIC 0.033MF	10% 25V
C741	1-124-475-11	ELECT 470MF	20% 16V
C742	1-123-352-00	ELECT 1MF	20% 50V
C743	1-123-352-00	ELECT 1MF	20% 50V

CONNECTOR

CN001	1-560-892-00	PIN, CONNECTOR 4P
CN002	1-560-891-00	PIN, CONNECTOR 3P
CN003	1-560-898-00	PIN, CONNECTOR 10P
CN004	1-560-896-00	PIN, CONNECTOR 8P
CN005	1-560-893-00	PIN, CONNECTOR 5P
CN006	1-560-892-00	PIN, CONNECTOR 4P
CN007	1-560-892-00	PIN, CONNECTOR 4P
CN008	1-560-897-00	PIN, CONNECTOR 9P
CN009	1-560-891-00	PIN, CONNECTOR 3P
CN011	1-560-900-00	PIN, CONNECTOR 12P
CN012	1-560-890-00	PIN, CONNECTOR 2P

DIODE

D007	8-719-911-19	DIODE 1SS119
D008	8-719-911-19	DIODE 1SS119
D011	8-719-000-12	DIODE MC931
D013	8-719-000-12	DIODE MC931
D017	=>8-719-911-19	DIODE 1SS119
D019	=>8-719-911-19	DIODE 1SS119
D025	8-719-100-34	DIODE RD5.6E-B1
D027	=>8-719-911-19	DIODE 1SS119
D504	8-719-911-19	DIODE 1SS119
D505	8-719-156-07	DIODE RD5.6E-B
D508	8-719-162-07	DIODE RD6.2E-B
D509	8-719-812-33	DIODE TLG123A
D510	8-719-812-33	DIODE TLG123A
D511	8-719-812-33	DIODE TLG123A
D512	8-719-812-33	DIODE TLG123A
D514	8-719-911-19	DIODE 1SS119
D515	8-719-911-19	DIODE 1SS119
D516	8-719-911-19	DIODE 1SS119
D517	8-719-911-19	DIODE 1SS119
D521	8-719-911-19	DIODE 1SS119
D522	8-719-911-19	DIODE 1SS119
D523	8-719-911-19	DIODE 1SS119
D524	8-719-812-33	DIODE TLG123A
D525	8-719-175-07	DIODE RD7.5E-B
D526	8-719-175-07	DIODE RD7.5E-B
D527	8-719-911-19	DIODE 1SS119
D528	8-719-911-19	DIODE 1SS119
D529	8-719-911-19	DIODE 1SS119
D530	8-719-911-19	DIODE 1SS119
D531	8-719-911-19	DIODE 1SS119
D532	8-719-911-19	DIODE 1SS119

IC

IC001	8-759-324-12	IC HA12412
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Ref.No	Part No.	Description	Remark
IC002	8-759-324-12	IC HA12412	
IC003	8-759-101-67	IC UPC1167C2	
IC004	8-759-101-67	IC UPC1167C2	
IC005	8-759-103-93	IC UPC393C	
IC006	8-759-990-82	IC TL082CP	
IC007	8-759-990-82	IC TL082CP	
IC008	8-759-240-66	IC TC4066BP	
IC009	8-759-240-66	IC TC4066BP	
IC010	8-759-400-04	IC AN6120	
IC011	8-759-400-04	IC AN6120	
IC012	8-752-009-70	IC CX20097	
IC013	8-759-700-62	IC NJM4562D	
IC014	8-759-240-52	IC TC4052BP	
IC015	8-759-700-62	IC NJM4562D	
IC016	8-752-006-10	IC CX20061	
IC017	8-752-006-10	IC CX20061	
IC018	8-759-240-93	IC TC4093BP	
IC019	8-759-240-01	IC TC4001BP	
IC020	8-759-910-68	IC MB88201-152G	

COIL

L001	1-408-421-00	MICRO INDUCTOR 100UH
L002	1-408-413-00	MICRO INDUCTOR 22UH
L003	1-407-163-XX	MICRO INDUCTOR 33UH
L004	1-410-079-11	COIL, PHASE SIFT 33UH
L005	1-410-079-11	COIL, PHASE SIFT 33UH
L007	1-408-415-00	MICRO INDUCTOR 33UH
L008	1-408-418-00	MICRO INDUCTOR 56UH
L010	1-408-413-00	MICRO INDUCTOR 22UH
L011	1-408-416-00	MICRO INDUCTOR 39UH
L012	1-407-163-XX	MICRO INDUCTOR 33UH
L013	1-408-413-00	MICRO INDUCTOR 22UH
L014	1-408-413-00	MICRO INDUCTOR 22UH
L015	1-408-413-00	MICRO INDUCTOR 22UH
L016	1-408-413-00	MICRO INDUCTOR 22UH
L020	1-408-417-00	MICRO INDUCTOR 47UH
L021	1-408-417-00	MICRO INDUCTOR 47UH
L022	1-408-417-00	MICRO INDUCTOR 47UH

L.P.F

LPF001	1-235-365-11	L.P.F
LPF002	1-235-365-11	L.P.F

IC LINK

PS001	1-532-605-11	LINK. IC (ICP-N10)
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TRANSISTOR

Q001	8-729-113-33	TRANSISTOR 2SB733-4
Q002	=>8-729-245-83	TRANSISTOR 2SC2458
Q003	=>8-729-204-83	TRANSISTOR 2SA1048-GR
Q004	=>8-729-245-83	TRANSISTOR 2SC2458
Q007	8-729-177-43	TRANSISTOR 2SD774

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

AF-3

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q008	8-729-603-50	TRANSISTOR 2SC403SP		R005	1-247-867-00	CARBON 33K 5%	1/6W
Q009	8-729-603-50	TRANSISTOR 2SC403SP		R006	1-247-823-00	CARBON 470 5%	1/6W
Q010	8-729-106-07	TRANSISTOR 2SK514-H		R007	1-247-873-00	CARBON 56K 5%	1/6W
Q012	8-729-965-22	TRANSISTOR 2SC1652		R008	1-247-855-00	CARBON 10K 5%	1/6W
Q013	8-729-603-50	TRANSISTOR 2SC403SP		R012	1-247-867-00	CARBON 33K 5%	1/6W
Q015	8-729-106-07	TRANSISTOR 2SK514-H		R013	1-247-855-00	CARBON 10K 5%	1/6W
Q016	8-729-603-50	TRANSISTOR 2SC403SP		R014	1-247-855-00	CARBON 10K 5%	1/6W
Q017	=>8-729-245-83	TRANSISTOR 2SC2458		R026	1-247-823-00	CARBON 470 5%	1/6W
Q019	=>8-729-245-83	TRANSISTOR 2SC2458		R027	1-247-861-00	CARBON 18K 5%	1/6W
Q020	=>8-729-245-83	TRANSISTOR 2SC2458		R028	1-247-831-00	CARBON 1K 5%	1/6W
Q021	=>8-729-245-83	TRANSISTOR 2SC2458		R029	1-247-825-00	CARBON 560 5%	1/6W
Q022	=>8-729-245-83	TRANSISTOR 2SC2458		R030	1-247-815-00	CARBON 220 5%	1/6W
Q023	=>8-729-245-83	TRANSISTOR 2SC2458		R031	1-247-822-00	CARBON 430 5%	1/6W
Q024	=>8-729-245-83	TRANSISTOR 2SC2458		R033	1-247-809-00	CARBON 120 5%	1/6W
Q030	=>8-729-245-83	TRANSISTOR 2SC2458		R034	1-247-819-00	CARBON 330 5%	1/6W
Q031	=>8-729-245-83	TRANSISTOR 2SC2458		R035 A	1-212-853-00	FUSIBLE 6.8 5%	1/4W F
Q032	8-729-965-22	TRANSISTOR 2SC1652		R036	1-247-855-00	CARBON 10K 5%	1/6W
Q034	8-729-965-22	TRANSISTOR 2SC1652		R037	1-247-823-00	CARBON 470 5%	1/6W
Q035	8-729-965-22	TRANSISTOR 2SC1652		R038	1-247-855-00	CARBON 10K 5%	1/6W
Q036	8-729-965-22	TRANSISTOR 2SC1652		R039	1-247-855-00	CARBON 10K 5%	1/6W
Q037	=>8-729-245-83	TRANSISTOR 2SC2458		R040	1-247-855-00	CARBON 10K 5%	1/6W
Q038	=>8-729-245-83	TRANSISTOR 2SC2458		R042	1-247-855-00	CARBON 10K 5%	1/6W
Q044	8-729-965-22	TRANSISTOR 2SC1652		R043	1-247-855-00	CARBON 10K 5%	1/6W
Q046	=>8-729-245-83	TRANSISTOR 2SC2458		R044	1-247-823-00	CARBON 470 5%	1/6W
Q049	8-729-900-89	TRANSISTOR DTC144ES		R045	1-247-861-00	CARBON 18K 5%	1/6W
Q701	=>8-729-245-83	TRANSISTOR 2SC2458		R046	1-247-831-00	CARBON 1K 5%	1/6W
Q703	=>8-729-245-83	TRANSISTOR 2SC2458		R047	1-247-825-00	CARBON 560 5%	1/6W
Q704	=>8-729-245-83	TRANSISTOR 2SC2458		R048	1-247-847-00	CARBON 4.7K 5%	1/6W
Q705	=>8-729-245-83	TRANSISTOR 2SC2458		R049	1-247-815-00	CARBON 220 5%	1/6W
Q706	8-729-965-22	TRANSISTOR 2SC1652		R050	1-247-822-00	CARBON 430 5%	1/6W
Q707	8-729-993-72	TRANSISTOR 2SA937		R052	1-247-809-00	CARBON 120 5%	1/6W
Q708	=>8-729-245-83	TRANSISTOR 2SC2458		R054	1-247-855-00	CARBON 10K 5%	1/6W
Q709	8-729-117-54	TRANSISTOR 2SA1175		R055	1-247-855-00	CARBON 10K 5%	1/6W
Q710	8-729-117-54	TRANSISTOR 2SA1175		R056	1-247-855-00	CARBON 10K 5%	1/6W
Q711	=>8-729-245-83	TRANSISTOR 2SC2458		R057	1-247-855-00	CARBON 10K 5%	1/6W
Q712	8-729-117-54	TRANSISTOR 2SA1175		R061	1-247-831-00	CARBON 1K 5%	1/6W
Q713	8-729-117-54	TRANSISTOR 2SA1175		R069	1-247-839-00	CARBON 2.2K 5%	1/6W
Q714	8-729-384-48	TRANSISTOR 2SA844		R071	1-247-855-00	CARBON 10K 5%	1/6W
Q715	8-729-384-48	TRANSISTOR 2SA844		R072	1-247-879-00	CARBON 100K 5%	1/6W
Q716	=>8-729-245-83	TRANSISTOR 2SC2458		R073	1-247-851-00	CARBON 6.8K 5%	1/6W
Q720	8-729-117-54	TRANSISTOR 2SA1175		R074	1-247-867-00	CARBON 33K 5%	1/6W
Q721	=>8-729-245-83	TRANSISTOR 2SC2458		R078	1-247-823-00	CARBON 470 5%	1/6W
Q722	=>8-729-245-83	TRANSISTOR 2SC2458		R079	1-247-831-00	CARBON 1K 5%	1/6W
Q723	8-729-900-33	TRANSISTOR DTC144EF		R080	1-247-825-00	CARBON 560 5%	1/6W
Q724	=>8-729-245-83	TRANSISTOR 2SC2458		R081	1-247-813-00	CARBON 180 5%	1/6W
Q725	8-729-117-54	TRANSISTOR 2SA1175		R082	1-247-815-00	CARBON 220 5%	1/6W
RESISTOR				R083	1-247-822-00	CARBON 430 5%	1/6W
R001	1-247-807-00	CARBON 100 5%	1/6W	R085	1-247-814-00	CARBON 200 5%	1/6W
R002	1-247-847-00	CARBON 4.7K 5%	1/6W	R087	1-247-855-00	CARBON 10K 5%	1/6W
R003	1-247-831-00	CARBON 1K 5%	1/6W	R088	1-247-855-00	CARBON 10K 5%	1/6W
R004	1-247-867-00	CARBON 33K 5%	1/6W	R089	1-247-855-00	CARBON 10K 5%	1/6W
				R090	1-247-823-00	CARBON 470 5%	1/6W
				R091	1-247-855-00	CARBON 10K 5%	1/6W

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R093	1-247-831-00	CARBON	1K 5% 1/6W	R164	1-247-855-00	CARBON	10K 5% 1/6W
R099	1-247-838-00	CARBON	2K 5% 1/6W	R165	1-247-842-00	CARBON	3K 5% 1/6W
R105	1-247-839-00	CARBON	2.2K 5% 1/6W	R166	1-247-822-00	CARBON	430 5% 1/6W
R106	1-247-823-00	CARBON	470 5% 1/6W	R167	1-247-858-00	CARBON	13K 5% 1/6W
R107	1-247-831-00	CARBON	1K 5% 1/6W	R168	1-247-838-00	CARBON	2K 5% 1/6W
R108	1-247-825-00	CARBON	560 5% 1/6W	R169	1-247-858-00	CARBON	13K 5% 1/6W
R110	1-247-839-00	CARBON	2.2K 5% 1/6W	R170	1-247-842-00	CARBON	3K 5% 1/6W
R111	1-247-867-00	CARBON	33K 5% 1/6W	R172	1-247-865-00	CARBON	27K 5% 1/6W
R112	1-247-855-00	CARBON	10K 5% 1/6W	R173	1-247-895-00	CARBON	470K 5% 1/6W
R113	1-247-815-00	CARBON	220 5% 1/6W	R174	1-247-849-00	CARBON	5.6K 5% 1/6W
R115	1-247-822-00	CARBON	430 5% 1/6W	R175	1-247-836-00	CARBON	1.6K 5% 1/6W
R116	1-247-814-00	CARBON	200 5% 1/6W	R176	1-247-814-00	CARBON	200 5% 1/6W
R117	1-247-855-00	CARBON	10K 5% 1/6W	R177	1-247-848-00	CARBON	5.1K 5% 1/6W
R118	1-247-855-00	CARBON	10K 5% 1/6W	R178	1-247-828-00	CARBON	750 5% 1/6W
R119	1-247-855-00	CARBON	10K 5% 1/6W	R179	1-247-815-00	CARBON	220 5% 1/6W
R120	1-247-855-00	CARBON	10K 5% 1/6W	R180	1-215-465-00	METAL	68K 1% 1/6W
R122	1-247-848-00	CARBON	5.1K 5% 1/6W	R181	1-215-446-00	METAL	11K 1% 1/6W
R123	1-247-863-00	CARBON	22K 5% 1/6W	R183	1-215-462-00	METAL	51K 1% 1/6W
R124	1-247-863-00	CARBON	22K 5% 1/6W	R184	1-215-462-00	METAL	51K 1% 1/6W
R125	1-247-863-00	CARBON	22K 5% 1/6W	R185	1-247-871-00	CARBON	47K 5% 1/6W
R126	1-247-839-00	CARBON	2.2K 5% 1/6W	R190	1-215-446-00	METAL	11K 1% 1/6W
R127	1-247-863-00	CARBON	22K 5% 1/6W	R191	1-215-465-00	METAL	68K 1% 1/6W
R128	1-247-863-00	CARBON	22K 5% 1/6W	R194	1-247-872-00	CARBON	51K 5% 1/6W
R129	1-247-863-00	CARBON	22K 5% 1/6W	R200	1-247-872-00	CARBON	51K 5% 1/6W
R130	1-247-839-00	CARBON	2.2K 5% 1/6W	R205	1-247-855-00	CARBON	10K 5% 1/6W
R132	1-247-855-00	CARBON	10K 5% 1/6W	R206	1-247-859-00	CARBON	15K 5% 1/6W
R133	1-247-859-00	CARBON	15K 5% 1/6W	R217	1-247-815-00	CARBON	220 5% 1/6W
R134	1-247-840-00	CARBON	2.4K 5% 1/6W	R218	1-247-871-00	CARBON	47K 5% 1/6W
R135	1-247-824-00	CARBON	510 5% 1/6W	R220	1-247-875-00	CARBON	68K 5% 1/6W
R136	1-247-855-00	CARBON	10K 5% 1/6W	R221	1-247-850-00	CARBON	6.2K 5% 1/6W
R137	1-247-855-00	CARBON	10K 5% 1/6W	R222	1-247-863-00	CARBON	22K 5% 1/6W
R138	1-247-822-00	CARBON	430 5% 1/6W	R223	1-247-831-00	CARBON	1K 5% 1/6W
R139	1-247-842-00	CARBON	3K 5% 1/6W	R224	1-247-887-00	CARBON	220K 5% 1/6W
R140	1-247-858-00	CARBON	13K 5% 1/6W	R225	1-247-842-00	CARBON	3K 5% 1/6W
R141	1-247-858-00	CARBON	13K 5% 1/6W	R226	1-247-879-00	CARBON	100K 5% 1/6W
R142	1-247-838-00	CARBON	2K 5% 1/6W	R227	1-247-855-00	CARBON	10K 5% 1/6W
R143	1-247-842-00	CARBON	3K 5% 1/6W	R228	1-247-879-00	CARBON	100K 5% 1/6W
R144	1-247-895-00	CARBON	470K 5% 1/6W	R229	1-247-831-00	CARBON	1K 5% 1/6W
R146	1-247-849-00	CARBON	5.6K 5% 1/6W	R230	1-247-887-00	CARBON	220K 5% 1/6W
R147	1-247-865-00	CARBON	27K 5% 1/6W	R231	1-247-842-00	CARBON	3K 5% 1/6W
R148	1-247-848-00	CARBON	5.1K 5% 1/6W	R232	1-247-848-00	CARBON	5.1K 5% 1/6W
R149	1-247-828-00	CARBON	750 5% 1/6W	R233	1-247-848-00	CARBON	5.1K 5% 1/6W
R150	1-247-814-00	CARBON	200 5% 1/6W	R234	1-247-815-00	CARBON	220 5% 1/6W
R151	1-247-851-00	CARBON	6.8K 5% 1/6W	R235	1-247-871-00	CARBON	47K 5% 1/6W
R152	1-247-847-00	CARBON	4.7K 5% 1/6W	R236	1-247-871-00	CARBON	47K 5% 1/6W
R157	1-247-855-00	CARBON	10K 5% 1/6W	R237	1-247-839-00	CARBON	2.2K 5% 1/6W
R158	1-247-859-00	CARBON	15K 5% 1/6W	R239	1-247-863-00	CARBON	22K 5% 1/6W
R159	1-247-840-00	CARBON	2.4K 5% 1/6W	R240	1-247-871-00	CARBON	47K 5% 1/6W
R160	1-247-824-00	CARBON	510 5% 1/6W	R241	1-247-875-00	CARBON	68K 5% 1/6W
R161	1-247-855-00	CARBON	10K 5% 1/6W	R243	1-247-850-00	CARBON	6.2K 5% 1/6W
R162	1-247-843-00	CARBON	3.3K 5% 1/6W	R244	1-247-855-00	CARBON	10K 5% 1/6W
R163	1-247-855-00	CARBON	10K 5% 1/6W	R245	1-247-855-00	CARBON	10K 5% 1/6W
				R246	1-247-855-00	CARBON	10K 5% 1/6W

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

AF-3

Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark		
R247	1-247-855-00	CARBON	10K	5%	1/6W	R325	1-247-879-00	CARBON	100K	5%	1/6W
R248	1-247-863-00	CARBON	22K	5%	1/6W	R326	1-247-831-00	CARBON	1K	5%	1/6W
R249	1-247-855-00	CARBON	10K	5%	1/6W	R327	1-247-859-00	CARBON	15K	5%	1/6W
R253	1-247-855-00	CARBON	10K	5%	1/6W	R330	1-247-838-00	CARBON	2K	5%	1/6W
R255	1-247-867-00	CARBON	33K	5%	1/6W	R332	1-247-862-00	CARBON	20K	5%	1/6W
R256	1-247-863-00	CARBON	22K	5%	1/6W	R338	1-247-862-00	CARBON	20K	5%	1/6W
R262	1-247-851-00	CARBON	6.8K	5%	1/6W	R343	1-247-807-00	CARBON	100	5%	1/6W
R263	1-247-823-00	CARBON	470	5%	1/6W	R344	1-247-807-00	CARBON	100	5%	1/6W
R264	1-247-861-00	CARBON	18K	5%	1/6W	R345	1-247-820-00	CARBON	360	5%	1/6W
R265	1-247-861-00	CARBON	18K	5%	1/6W	R346	1-247-820-00	CARBON	360	5%	1/6W
R266	1-247-807-00	CARBON	100	5%	1/6W	R350	1-247-843-00	CARBON	3.3K	5%	1/6W
R267	1-215-442-00	METAL	7.5K	1%	1/6W	R351	1-247-843-00	CARBON	3.3K	5%	1/6W
R268	1-247-843-00	CARBON	3.3K	5%	1/6W	R352	1-247-857-00	CARBON	12K	5%	1/6W
R269	1-247-855-00	CARBON	10K	5%	1/6W	R601	1-247-871-00	CARBON	47K	5%	1/6W
R270	1-247-855-00	CARBON	10K	5%	1/6W	R701	1-247-855-00	CARBON	10K	5%	1/6W
R271	1-247-875-00	CARBON	68K	5%	1/6W	R702	1-247-855-00	CARBON	10K	5%	1/6W
R272	1-247-871-00	CARBON	47K	5%	1/6W	R703	1-247-847-00	CARBON	4.7K	5%	1/6W
R273	1-247-871-00	CARBON	47K	5%	1/6W	R706	1-247-843-00	CARBON	3.3K	5%	1/6W
R275	1-247-851-00	CARBON	6.8K	5%	1/6W	R707	1-247-847-00	CARBON	4.7K	5%	1/6W
R276	1-247-823-00	CARBON	470	5%	1/6W	R708	1-247-843-00	CARBON	3.3K	5%	1/6W
R277	1-247-861-00	CARBON	18K	5%	1/6W	R711	1-247-867-00	CARBON	33K	5%	1/6W
R278	1-247-861-00	CARBON	18K	5%	1/6W	R712	1-247-867-00	CARBON	33K	5%	1/6W
R279	1-247-807-00	CARBON	100	5%	1/6W	R713	1-247-855-00	CARBON	10K	5%	1/6W
R280	1-215-421-00	METAL	1K	1%	1/6W	R714	1-247-867-00	CARBON	33K	5%	1/6W
R281	1-247-844-00	CARBON	3.6K	5%	1/6W	R715	1-247-867-00	CARBON	33K	5%	1/6W
R282	1-247-855-00	CARBON	10K	5%	1/6W	R716	1-247-855-00	CARBON	10K	5%	1/6W
R283	1-247-855-00	CARBON	10K	5%	1/6W	R718	1-247-849-00	CARBON	5.6K	5%	1/6W
R284	1-247-869-00	CARBON	39K	5%	1/6W	R719	1-247-849-00	CARBON	5.6K	5%	1/6W
R285	1-247-871-00	CARBON	47K	5%	1/6W	R720	1-247-849-00	CARBON	5.6K	5%	1/6W
R286	1-247-871-00	CARBON	47K	5%	1/6W	R721	1-247-849-00	CARBON	5.6K	5%	1/6W
R288	1-215-453-00	METAL	22K	1%	1/6W	R722	1-247-867-00	CARBON	33K	5%	1/6W
R289	1-215-453-00	METAL	22K	1%	1/6W	R724	1-247-867-00	CARBON	33K	5%	1/6W
R290	1-247-807-00	CARBON	100	5%	1/6W	R725	1-247-855-00	CARBON	10K	5%	1/6W
R291	1-247-831-00	CARBON	1K	5%	1/6W	R726	1-247-867-00	CARBON	33K	5%	1/6W
R293	1-247-867-00	CARBON	33K	5%	1/6W	R727	1-247-867-00	CARBON	33K	5%	1/6W
R296	1-247-867-00	CARBON	33K	5%	1/6W	R728	1-247-855-00	CARBON	10K	5%	1/6W
R297	1-247-848-00	CARBON	5.1K	5%	1/6W	R729	1-247-839-00	CARBON	2.2K	5%	1/6W
R298	1-247-863-00	CARBON	22K	5%	1/6W	R730	1-247-813-00	CARBON	180	5%	1/6W
R299	1-247-863-00	CARBON	22K	5%	1/6W	R731	1-247-813-00	CARBON	180	5%	1/6W
R300	1-247-863-00	CARBON	22K	5%	1/6W	R732	1-247-867-00	CARBON	33K	5%	1/6W
R301	1-247-855-00	CARBON	10K	5%	1/6W	R734	1-247-812-00	CARBON	160	5%	1/6W
R302	1-247-855-00	CARBON	10K	5%	1/6W	R735	1-247-812-00	CARBON	160	5%	1/6W
R303	1-247-871-00	CARBON	47K	5%	1/6W	R736	1-247-867-00	CARBON	33K	5%	1/6W
R304	1-247-855-00	CARBON	10K	5%	1/6W	R737	1-247-821-00	CARBON	390	5%	1/6W
R308	1-247-863-00	CARBON	22K	5%	1/6W	R739	1-247-863-00	CARBON	22K	5%	1/6W
R310	1-247-847-00	CARBON	4.7K	5%	1/6W	R740	1-247-863-00	CARBON	22K	5%	1/6W
R311	1-247-855-00	CARBON	10K	5%	1/6W	R741	1-247-855-00	CARBON	10K	5%	1/6W
R312	1-247-843-00	CARBON	3.3K	5%	1/6W	R742	1-247-859-00	CARBON	15K	5%	1/6W
R313	1-247-855-00	CARBON	10K	5%	1/6W	R743	1-247-859-00	CARBON	15K	5%	1/6W
R315	1-247-855-00	CARBON	10K	5%	1/6W	R744	1-247-847-00	CARBON	4.7K	5%	1/6W
R322	1-247-879-00	CARBON	100K	5%	1/6W	R745	1-247-847-00	CARBON	4.7K	5%	1/6W
R323	1-247-839-00	CARBON	2.2K	5%	1/6W	R746	1-247-855-00	CARBON	10K	5%	1/6W
R324	1-247-871-00	CARBON	47K	5%	1/6W	R747	1-247-855-00	CARBON	10K	5%	1/6W
						R748	1-247-843-00	CARBON	3.3K	5%	1/6W
						R749	1-247-843-00	CARBON	3.3K	5%	1/6W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R750	1-247-871-00	CARBON 47K 5% 1/6W	
R751	1-247-871-00	CARBON 47K 5% 1/6W	
R754	1-247-903-00	CARBON 1M 5% 1/6W	
R755	1-247-903-00	CARBON 1M 5% 1/6W	
R756	1-247-839-00	CARBON 2.2K 5% 1/6W	
R757	1-247-839-00	CARBON 2.2K 5% 1/6W	
R758	1-247-810-00	CARBON 130 5% 1/6W	
R759	1-247-810-00	CARBON 130 5% 1/6W	
R780	1-247-825-00	CARBON 560 5% 1/6W	
R781	1-247-825-00	CARBON 560 5% 1/6W	
R782	1-247-867-00	CARBON 33K 5% 1/6W	
R783	1-247-867-00	CARBON 33K 5% 1/6W	
R784	1-247-825-00	CARBON 560 5% 1/6W	
R785	1-247-825-00	CARBON 560 5% 1/6W	
R786	1-247-855-00	CARBON 10K 5% 1/6W	
R787	1-247-855-00	CARBON 10K 5% 1/6W	
R788	1-247-831-00	CARBON 1K 5% 1/6W	
R789	1-247-896-00	CARBON 510K 5% 1/6W	
R790	1-247-855-00	CARBON 10K 5% 1/6W	
R793	1-247-855-00	CARBON 10K 5% 1/6W	
R794	1-247-847-00	CARBON 4.7K 5% 1/6W	
R795	1-247-847-00	CARBON 4.7K 5% 1/6W	
R796	1-247-839-00	CARBON 2.2K 5% 1/6W	
R797	1-247-839-00	CARBON 2.2K 5% 1/6W	
R798	1-247-803-00	CARBON 68 5% 1/6W	
R799	1-247-831-00	CARBON 1K 5% 1/6W	
R800	1-247-831-00	CARBON 1K 5% 1/6W	
R801	1-247-815-00	CARBON 220 5% 1/6W	
R802	1-247-815-00	CARBON 220 5% 1/6W	
R803	1-247-875-00	CARBON 68K 5% 1/6W	
R804	1-247-879-00	CARBON 100K 5% 1/6W	
R805	1-247-879-00	CARBON 100K 5% 1/6W	
R806	1-247-855-00	CARBON 10K 5% 1/6W	
R807	1-247-815-00	CARBON 220 5% 1/6W	
R808	1-247-815-00	CARBON 220 5% 1/6W	
R809	1-247-813-00	CARBON 180 5% 1/6W	
R810	1-247-873-00	CARBON 56K 5% 1/6W	
R811	1-247-855-00	CARBON 10K 5% 1/6W	
R812	1-247-855-00	CARBON 10K 5% 1/6W	
R813	1-247-855-00	CARBON 10K 5% 1/6W	
R814	1-247-855-00	CARBON 10K 5% 1/6W	
R815	1-247-855-00	CARBON 10K 5% 1/6W	
R816	1-247-895-00	CARBON 470K 5% 1/6W	
R817	1-247-879-00	CARBON 100K 5% 1/6W	
R818	1-247-895-00	CARBON 470K 5% 1/6W	
R819	1-247-895-00	CARBON 470K 5% 1/6W	
R820	1-247-895-00	CARBON 470K 5% 1/6W	
R821	1-247-895-00	CARBON 470K 5% 1/6W	
R828	1-247-887-00	CARBON 220K 5% 1/6W	

VARIABLE RESISTOR

RV005	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV006	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV010	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV012	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV013	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K

Ref.No	Part No.	Description	Remark
RV014	1-228-990-00	RES, ADJ, METAL GLAZE 1K	
RV015	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K	
RV016	1-228-990-00	RES, ADJ, METAL GLAZE 1K	
RV017	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K	
RV018	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV019	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV020	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV021	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV022	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV023	1-228-997-00	RES, ADJ, METAL GLAZE 100K	

Q DET COIL

T002	1-404-545-11	COIL, Q DET
T004	1-404-545-11	COIL, Q DET
T006	1-404-544-11	COIL, Q DET
T008	1-404-544-11	COIL, Q DET

The parts for AF-3 board whose end of part No. is -14 or -15.

▲:A-6713-200-A AF-3 BOARD, COMPLETE

▲:3-684-072-01 LID, BOTTOM, AF SHIELD CASE(S)
▲:3-684-087-01 CASE (S) (MAIN), SHIELD, AF
3-701-748-00 CLAMP

BPF

BPF001	1-235-367-11	B.P.F
BPF002	1-235-367-11	B.P.F
BPF003	1-235-366-11	B.P.F
BPF004	1-235-366-11	B.P.F

CAPACITOR

C001	1-123-356-00	ELECT	10MF	20%	16V
C002	1-161-025-00	CERAMIC	0.1MF	10%	25V
C003	1-161-025-00	CERAMIC	0.1MF	10%	25V
C004	1-161-025-00	CERAMIC	0.1MF	10%	25V
C006	1-161-025-00	CERAMIC	0.1MF	10%	25V
C007	1-123-332-00	ELECT	47MF	20%	16V
C008	1-161-025-00	CERAMIC	0.1MF	10%	25V
C010	1-123-306-00	ELECT	47MF	20%	10V
C011	1-123-306-00	ELECT	47MF	20%	10V
C012	1-161-025-00	CERAMIC	0.1MF	10%	25V
C013	1-123-306-00	ELECT	47MF	20%	6.3V
C015	1-161-025-00	CERAMIC	0.1MF	10%	25V
C016	1-102-519-00	CERAMIC	36PF	5%	50V
C017	1-123-332-00	ELECT	47MF	20%	16V
C018	1-161-025-00	CERAMIC	0.1MF	10%	25V
C020	1-161-025-00	CERAMIC	0.1MF	10%	25V
C021	1-161-025-00	CERAMIC	0.1MF	10%	25V
C023	1-123-356-00	ELECT	10MF	20%	16V
C025	1-102-973-00	CERAMIC	100PF	5%	50V
C026	1-101-884-00	CERAMIC	56PF	5%	50V

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part NO.	Description			Remark	Ref.No	Part NO.	Description			Remark
C027	1-161-025-00	CERAMIC	0.1MF	10%	25V	C106	1-161-013-00	CERAMIC	0.01MF	10%	25V
C028	1-123-381-00	ELECT	2.2MF	20%	50V	C107	1-130-497-00	MYLAR	0.15MF	5%	50V
C030	1-123-381-00	ELECT	2.2MF	20%	50V	C109	1-106-186-00	MYLAR	0.0039MF	5%	50V
C031	1-161-025-00	CERAMIC	0.1MF	10%	25V	C110	1-106-182-00	MYLAR	0.0027MF	5%	50V
C032	1-123-332-00	ELECT	47MF	20%	16V	C111	1-106-178-00	MYLAR	0.0018MF	5%	50V
C033	1-161-025-00	CERAMIC	0.1MF	10%	25V	C115	1-123-356-00	ELECT	10MF	20%	16V
C034	1-102-519-00	CERAMIC	36PF	5%	50V	C116	1-123-307-00	ELECT	100MF	20%	10V
C035	1-161-025-00	CERAMIC	0.1MF	10%	25V	C117	1-123-332-00	ELECT	47MF	20%	16V
C036	1-161-025-00	CERAMIC	0.1MF	10%	25V	C118	1-123-332-00	ELECT	47MF	20%	16V
C038	1-102-973-00	CERAMIC	100PF	5%	50V	C119	1-102-958-00	CERAMIC	20PF	5%	50V
C039	1-101-884-00	CERAMIC	56PF	5%	50V	C120	1-130-485-00	MYLAR	0.015MF	5%	50V
C041	1-123-356-00	ELECT	10MF	20%	16V	C121	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C042	1-123-333-00	ELECT	100MF	20%	16V	C122	1-130-469-00	MYLAR	680PF	5%	50V
C046	1-161-025-00	CERAMIC	0.1MF	10%	25V	C123	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C048	1-123-333-00	ELECT	100MF	20%	16V	C124	1-130-497-00	MYLAR	0.15MF	5%	50V
C050	1-123-332-00	ELECT	47MF	20%	16V	C125	1-131-383-00	TANTALUM	10MF	10%	6.3V
C054	1-102-822-00	CERAMIC	390PF	5%	50V	C126	1-131-347-00	TANTALUM	1MF	20%	16V
C055	1-161-025-00	CERAMIC	0.1MF	10%	25V	C127	1-108-590-00	MYLAR	0.03MF	5%	50V
C057	1-102-973-00	CERAMIC	100PF	5%	50V	C128	1-130-475-00	MYLAR	0.0022MF	5%	50V
C058	1-101-884-00	CERAMIC	56PF	5%	50V	C130	1-130-494-11	MYLAR	0.082MF	5%	50V
C059	1-123-356-00	ELECT	10MF	20%	16V	C131	1-130-485-00	MYLAR	0.015MF	5%	50V
C060	1-123-381-00	ELECT	2.2MF	20%	50V	C132	1-123-356-00	ELECT	10MF	20%	16V
C062	1-123-381-00	ELECT	2.2MF	20%	50V	C133	1-161-013-00	CERAMIC	0.01MF	10%	25V
C063	1-161-025-00	CERAMIC	0.1MF	10%	25V	C134	1-123-330-00	ELECT	22MF	20%	16V
C065	1-123-332-00	ELECT	47MF	20%	16V	C143	1-123-332-00	ELECT	47MF	20%	16V
C069	1-161-025-00	CERAMIC	0.1MF	10%	25V	C144	1-123-330-00	ELECT	22MF	20%	16V
C072	1-102-822-00	CERAMIC	390PF	5%	50V	C146	1-123-332-00	ELECT	47MF	20%	16V
C073	1-161-025-00	CERAMIC	0.1MF	10%	25V	C147	1-123-330-00	ELECT	22MF	20%	16V
C075	1-102-973-00	CERAMIC	100PF	5%	50V	C150	1-123-332-00	ELECT	47MF	20%	16V
C076	1-101-884-00	CERAMIC	56PF	5%	50V	C151	1-123-381-00	ELECT	2.2MF	20%	50V
C080	1-161-025-00	CERAMIC	0.1MF	10%	25V	C152	1-102-973-00	CERAMIC	100PF	5%	50V
C081	1-106-178-00	MYLAR	0.0018MF	5%	50V	C153	1-123-332-00	ELECT	47MF	20%	16V
C082	1-106-182-00	MYLAR	0.0027MF	5%	50V	C154	1-123-381-00	ELECT	2.2MF	20%	50V
C083	1-106-186-00	MYLAR	0.0039MF	5%	50V	C155	1-102-973-00	CERAMIC	100PF	5%	50V
C084	1-123-356-00	ELECT	10MF	20%	16V	C156	1-123-330-00	ELECT	22MF	20%	16V
C086	1-123-307-00	ELECT	100MF	20%	10V	C157	1-123-330-00	ELECT	22MF	20%	16V
C087	1-161-013-00	CERAMIC	0.01MF	10%	25V	C158	1-123-330-00	ELECT	22MF	20%	16V
C088	1-123-307-00	ELECT	100MF	20%	10V	C159	1-123-318-00	ELECT	33MF	20%	16V
C089	1-123-332-00	ELECT	47MF	20%	16V	C160	1-123-332-00	ELECT	47MF	20%	16V
C090	1-123-332-00	ELECT	47MF	20%	16V	C161	1-123-330-00	ELECT	22MF	20%	16V
C091	1-123-356-00	ELECT	10MF	20%	16V	C162	1-123-318-00	ELECT	33MF	20%	16V
C092	1-102-958-00	CERAMIC	20PF	5%	50V	C163	1-123-356-00	ELECT	10MF	20%	16V
C093	1-130-485-00	MYLAR	0.015MF	5%	50V	C164	1-123-356-00	ELECT	10MF	20%	16V
C095	1-130-485-00	MYLAR	0.015MF	5%	50V	C165	1-123-330-00	ELECT	22MF	20%	16V
C096	1-130-494-11	MYLAR	0.082MF	5%	50V	C166	1-123-356-00	ELECT	10MF	20%	16V
C098	1-130-475-00	MYLAR	0.0022MF	5%	50V	C167	1-123-380-00	ELECT	1MF	20%	50V
C099	1-102-936-00	CERAMIC	3PF	0.25PF	50V	C168	1-123-356-00	ELECT	10MF	20%	16V
C100	1-130-469-00	MYLAR	680PF	5%	50V	C169	1-123-330-00	ELECT	22MF	20%	16V
C101	1-108-590-00	MYLAR	0.03MF	5%	50V	C170	1-123-380-00	ELECT	1MF	20%	50V
C102	1-131-383-00	TANTALUM	10MF	10%	6.3V	C171	1-161-025-00	CERAMIC	0.1MF	10%	25V
C103	1-131-347-00	TANTALUM	1MF	20%	16V	C173	1-161-013-00	CERAMIC	0.01MF	10%	25V
C105	1-123-307-00	ELECT	100MF	20%	10V	C175	1-123-332-00	ELECT	47MF	20%	16V
						C176	1-102-976-00	CERAMIC	180PF	5%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark	Ref.No	Part NO.	Description	Remark
C177	1-161-013-00	CERAMIC	0.01MF 10% 25V	C711	1-130-469-00	MYLAR	680PF 5% 50V
C178	1-102-522-00	CERAMIC	51PF 5% 50V	C712	1-123-332-00	ELECT	47MF 20% 16V
C179	1-102-978-00	CERAMIC	220PF 5% 50V	C713	1-123-332-00	ELECT	47MF 20% 16V
C180	1-102-978-00	CERAMIC	220PF 5% 50V	C714	1-130-469-00	MYLAR	680PF 5% 50V
C181	1-161-013-00	CERAMIC	0.01MF 10% 25V	C715	1-130-469-00	MYLAR	680PF 5% 50V
C182	1-123-332-00	ELECT	47MF 20% 16V	C722	1-124-231-00	ELECT	4.7MF 20% 16V
C183	1-123-332-00	ELECT	47MF 20% 16V	C724	1-123-380-00	ELECT	1MF 20% 50V
C184	1-102-529-00	CERAMIC	100PF 5% 50V	C726	1-161-039-00	CERAMIC	0.001MF 10% 25V
C185	1-123-332-00	ELECT	47MF 20% 16V	C728	1-102-980-00	CERAMIC	270PF 5% 50V
C186	1-123-332-00	ELECT	47MF 20% 16V	C731	1-123-332-00	ELECT	47MF 20% 16V
C187	1-161-025-00	CERAMIC	0.1MF 10% 25V	C732	1-123-332-00	ELECT	47MF 20% 16V
C189	1-161-025-00	CERAMIC	0.1MF 10% 25V	C733	1-161-013-00	CERAMIC	0.01MF 10% 25V
C190	1-123-332-00	ELECT	47MF 20% 16V	C734	1-124-168-00	ELECT	100MF 20% 16V
C191	1-161-025-00	CERAMIC	0.1MF 10% 25V	C735	1-123-381-00	ELECT	2.2MF 20% 50V
C192	1-123-332-00	ELECT	47MF 20% 16V	C736	1-123-381-00	ELECT	2.2MF 20% 50V
C193	1-102-529-00	CERAMIC	100PF 5% 50V	C738	1-124-233-00	ELECT	10MF 20% 16V
C194	1-123-332-00	ELECT	47MF 20% 16V	C739	1-161-057-00	CERAMIC	0.033MF 10% 25V
C195	1-123-332-00	ELECT	47MF 20% 16V	C741	1-124-475-11	ELECT	470MF 20% 16V
C196	1-123-332-00	ELECT	47MF 20% 16V	C742	1-123-380-00	ELECT	1MF 20% 50V
C197	1-102-625-61	CERAMIC	100PF 5% 50V	C743	1-123-380-00	ELECT	1MF 20% 50V
C198	1-161-013-00	CERAMIC	0.01MF 10% 25V	C750	1-102-973-00	CERAMIC	100PF 5% 50V
C199	1-102-517-00	CERAMIC	30PF 5% 50V	C751	1-161-013-00	CERAMIC	0.01MF 10% 25V
C200	1-102-531-00	CERAMIC	150PF 5% 50V	C752	1-161-013-00	CERAMIC	0.01MF 10% 25V
C201	1-102-531-00	CERAMIC	150PF 5% 50V	C753	1-161-025-00	CERAMIC	0.1MF 10% 25V
C202	1-161-013-00	CERAMIC	0.01MF 10% 25V	C754	1-161-025-00	CERAMIC	0.1MF 10% 25V
C203	1-161-013-00	CERAMIC	0.01MF 10% 25V	C755	1-130-483-00	MYLAR	0.01MF 5% 50V
C209	1-123-356-00	ELECT	10MF 20% 16V	C756	1-130-475-00	MYLAR	0.0022MF 5% 50V
C211	1-161-025-00	CERAMIC	0.1MF 10% 25V	C757	1-130-495-00	MYLAR	0.1MF 5% 50V
C213	1-123-332-00	ELECT	47MF 20% 16V	C758	1-161-057-00	CERAMIC	0.033MF 10% 25V
C216	1-123-381-00	ELECT	2.2MF 20% 50V	C759	1-161-025-00	CERAMIC	0.1MF 10% 25V
C217	1-123-381-00	ELECT	2.2MF 20% 50V	C760	1-161-025-00	CERAMIC	0.1MF 10% 25V
C221	1-123-330-00	ELECT	22MF 20% 16V	<u>CONNECTOR</u>			
C222	1-123-330-00	ELECT	22MF 20% 16V	CN001	1-560-892-00	PIN, CONNECTOR	4P
C223	1-102-936-00	CERAMIC	3PF 0.25PF 50V	CN002	1-560-891-00	PIN, CONNECTOR	3P
C224	1-123-380-00	ELECT	1MF 20% 50V	CN003	1-560-898-00	PIN, CONNECTOR	10P
C225	1-161-013-00	CERAMIC	0.01MF 10% 25V	CN004	1-560-896-00	PIN, CONNECTOR	8P
C226	1-161-013-00	CERAMIC	0.01MF 10% 25V	CN005	1-560-893-00	PIN, CONNECTOR	5P
C227	1-161-013-00	CERAMIC	0.01MF 10% 25V	CN006	1-560-892-00	PIN, CONNECTOR	4P
C229	1-130-471-00	MYLAR	0.001MF 5% 50V	CN007	1-560-892-00	PIN, CONNECTOR	4P
C232	1-130-471-00	MYLAR	0.001MF 5% 50V	CN008	1-560-897-00	PIN, CONNECTOR	9P
C235	1-161-013-00	CERAMIC	0.01MF 10% 25V	CN009	1-560-891-00	PIN, CONNECTOR	3P
C236	1-130-491-00	MYLAR	0.047MF 5% 50V	CN011	1-560-900-00	PIN, CONNECTOR	12P
C237	1-130-491-00	MYLAR	0.047MF 5% 50V	CN012	1-560-890-00	PIN, CONNECTOR	2P
C238	1-123-330-00	ELECT	22MF 20% 16V	<u>DIODE</u>			
C240	1-161-025-00	CERAMIC	0.1MF 10% 25V	D007	8-719-911-19	DIODE	1SS119
C241	1-123-356-00	ELECT	10MF 20% 16V	D008	8-719-911-19	DIODE	1SS119
C501	1-124-233-00	ELECT	10MF 20% 16V	D011	8-719-000-12	DIODE	MC931
C701	1-123-356-00	ELECT	10MF 20% 16V	D013	8-719-000-12	DIODE	MC931
C702	1-123-356-00	ELECT	10MF 20% 16V	D017	=>8-719-911-19	DIODE	1SS119
C704	1-123-322-00	ELECT	330MF 20% 16V	D019	=>8-719-911-19	DIODE	1SS119
C706	1-124-231-00	ELECT	4.7MF 20% 16V	D025	8-719-100-34	DIODE	RD5.6E-B1
C709	1-123-381-00	ELECT	2.2MF 20% 50V				
C710	1-130-469-00	MYLAR	680PF 5% 50V				

When indicating parts by reference number, please include the board name.

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Ref.No	Part NO.	Description
D027	=>8-719-911-19	DIODE 1SS119
D504	8-719-911-19	DIODE 1SS119
D505	8-719-156-07	DIODE RD5.6E-B
D508	8-719-162-07	DIODE RD6.2E-B
D509	8-719-100-36	DIODE RD5.6E-B3
D511	8-719-100-36	DIODE RD5.6E-B3
D514	8-719-911-19	DIODE 1SS119
D515	8-719-911-19	DIODE 1SS119
D516	8-719-911-19	DIODE 1SS119
D517	8-719-911-19	DIODE 1SS119
D521	8-719-911-19	DIODE 1SS119
D522	8-719-911-19	DIODE 1SS119
D523	8-719-911-19	DIODE 1SS119
D524	8-719-812-33	DIODE TLG123A
D525	8-719-175-07	DIODE RD7.5E-B
D527	8-719-911-19	DIODE 1SS119
D528	8-719-911-19	DIODE 1SS119
D529	8-719-911-19	DIODE 1SS119
D530	8-719-911-19	DIODE 1SS119
D531	8-719-911-19	DIODE 1SS119
D532	8-719-911-19	DIODE 1SS119
D850	8-719-911-19	DIODE 1SS119
<u>IC</u>		
IC001	8-759-324-12	IC HA12412
IC002	8-759-324-12	IC HA12412
IC003	8-759-101-67	IC UPC1167C2
IC004	8-759-101-67	IC UPC1167C2
IC005	8-759-103-93	IC UPC393C
IC006	8-759-990-82	IC TL082CP
IC007	8-759-990-82	IC TL082CP
IC008	8-759-240-66	IC TC4066BP
IC009	8-759-240-66	IC TC4066BP
IC010	8-759-400-04	IC AN6120
IC011	8-759-400-04	IC AN6120
IC012	8-752-009-70	IC CX20097
IC013	8-759-700-62	IC NJM4562D
IC014	8-759-240-52	IC TC4052BP
IC015	8-759-700-62	IC NJM4562D
IC016	8-752-006-10	IC CX20061
IC017	8-752-006-10	IC CX20061
IC018	8-759-240-93	IC TC4093BP
IC019	8-759-240-01	IC TC4001BP
IC020	8-759-913-02	IC MB88201-167G
IC021	8-752-006-10	IC CX20061
IC022	8-752-006-10	IC CX20061
<u>COIL</u>		
L001	1-408-421-00	MICRO INDUCTOR 100UH
L002	1-408-413-00	MICRO INDUCTOR 22UH

Ref.No	Part NO.	Description	Remark
L003	1-407-163-XX	MICRO INDUCTOR 33UH	
L004	1-407-163-XX	MICRO INDUCTOR 33UH	
L005	1-407-163-XX	MICRO INDUCTOR 33UH	
L007	1-408-415-00	MICRO INDUCTOR 33UH	
L008	1-408-418-00	MICRO INDUCTOR 56UH	
L010	1-408-413-00	MICRO INDUCTOR 22UH	
L011	1-408-416-00	MICRO INDUCTOR 39UH	
L012	1-407-163-XX	MICRO INDUCTOR 33UH	
L013	1-408-413-00	MICRO INDUCTOR 22UH	
L014	1-408-413-00	MICRO INDUCTOR 22UH	
L015	1-408-413-00	MICRO INDUCTOR 22UH	
L016	1-408-413-00	MICRO INDUCTOR 22UH	
L020	1-408-417-00	MICRO INDUCTOR 47UH	
L021	1-408-417-00	MICRO INDUCTOR 47UH	
L022	1-408-417-00	MICRO INDUCTOR 47UH	
L026	1-408-421-00	MICRO INDUCTOR 100UH	
L027	1-408-421-00	MICRO INDUCTOR 100UH	
L028	1-408-429-00	MICRO INDUCTOR 470UH	
<u>L.P.F</u>			
LPF001	1-235-365-11	L.P.F	
LPF002	1-235-365-11	L.P.F	
<u>IC LINK</u>			
PS001A	1-532-605-11	LINK, IC	ICP-N10
<u>TRANSISTOR</u>			
Q001	A.8-729-113-33	TRANSISTOR 2SB733-4	
Q002	8-729-900-89	TRANSISTOR DTC144ES	
Q003	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q004	=>8-729-245-83	TRANSISTOR 2SC2458	
Q007	8-729-177-43	TRANSISTOR 2SD774	
Q008	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q009	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q010	8-729-106-07	TRANSISTOR 2SK514-H	
Q012	8-729-900-37	TRANSISTOR DTC124EF	
Q015	8-729-106-07	TRANSISTOR 2SK514-H	
Q017	8-729-900-89	TRANSISTOR DTC144ES	
Q019	=>8-729-245-83	TRANSISTOR 2SC2458	
Q020	=>8-729-245-83	TRANSISTOR 2SC2458	
Q021	=>8-729-245-83	TRANSISTOR 2SC2458	
Q022	=>8-729-245-83	TRANSISTOR 2SC2458	
Q023	=>8-729-245-83	TRANSISTOR 2SC2458	
Q024	=>8-729-245-83	TRANSISTOR 2SC2458	
Q030	=>8-729-245-83	TRANSISTOR 2SC2458	
Q031	=>8-729-245-83	TRANSISTOR 2SC2458	
Q032	8-729-965-22	TRANSISTOR 2SC1652	
Q034	8-729-965-22	TRANSISTOR 2SC1652	
Q035	8-729-965-22	TRANSISTOR 2SC1652	
Q036	8-729-965-22	TRANSISTOR 2SC1652	
Q037	=>8-729-245-83	TRANSISTOR 2SC2458	
Q038	=>8-729-245-83	TRANSISTOR 2SC2458	

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark	Ref.No	Part NO.	Description	Remark
Q044	8-729-965-22	TRANSISTOR 2SC1652		R047	1-247-825-00	CARBON 560 5% 1/6W	
Q046	=>8-729-245-83	TRANSISTOR 2SC2458		R048	1-247-847-00	CARBON 4.7K 5% 1/6W	
Q049	8-729-900-89	TRANSISTOR DTC144ES		R049	1-247-815-00	CARBON 220 5% 1/6W	
Q701	=>8-729-245-83	TRANSISTOR 2SC2458		R050	1-247-822-00	CARBON 430 5% 1/6W	
Q703	=>8-729-245-83	TRANSISTOR 2SC2458		R052	1-247-809-00	CARBON 120 5% 1/6W	
Q704	=>8-729-245-83	TRANSISTOR 2SC2458		R054	1-247-855-00	CARBON 10K 5% 1/6W	
Q705	=>8-729-245-83	TRANSISTOR 2SC2458		R055	1-247-855-00	CARBON 10K 5% 1/6W	
Q706	8-729-965-22	TRANSISTOR 2SC1652		R056	1-247-855-00	CARBON 10K 5% 1/6W	
Q707	8-729-993-72	TRANSISTOR 2SA937		R057	1-247-855-00	CARBON 10K 5% 1/6W	
Q708	=>8-729-245-83	TRANSISTOR 2SC2458		R061	1-247-831-00	CARBON 1K 5% 1/6W	
Q709	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R069	1-247-839-00	CARBON 2.2K 5% 1/6W	
Q710	=>8-729-204-83	TRANSISTOR 2SA1048-GR		R071	1-247-855-00	CARBON 10K 5% 1/6W	
Q715	=>8-729-245-83	TRANSISTOR 2SC2458		R072	1-247-879-00	CARBON 100K 5% 1/6W	
Q716	=>8-729-245-83	TRANSISTOR 2SC2458		R073	1-247-851-00	CARBON 6.8K 5% 1/6W	
Q720	8-729-117-54	TRANSISTOR 2SA1175		R083	1-247-822-00	CARBON 430 5% 1/6W	
Q721	=>8-729-245-83	TRANSISTOR 2SC2458		R085	1-247-814-00	CARBON 200 5% 1/6W	
Q722	=>8-729-245-83	TRANSISTOR 2SC2458		R087	1-247-855-00	CARBON 10K 5% 1/6W	
Q723	8-729-900-33	TRANSISTOR DTC144EF		R088	1-247-855-00	CARBON 10K 5% 1/6W	
Q724	=>8-729-245-83	TRANSISTOR 2SC2458		R089	1-247-855-00	CARBON 10K 5% 1/6W	
Q725	8-729-117-54	TRANSISTOR 2SA1175		R090	1-247-823-00	CARBON 470 5% 1/6W	
Q728	=>8-729-245-83	TRANSISTOR 2SC2458		R091	1-247-855-00	CARBON 10K 5% 1/6W	
Q729	=>8-729-245-83	TRANSISTOR 2SC2458		R093	1-247-831-00	CARBON 1K 5% 1/6W	
<u>RESISTOR</u>				R105	1-247-839-00	CARBON 2.2K 5% 1/6W	
R001	1-247-807-00	CARBON 100 5% 1/6W		R110	1-247-839-00	CARBON 2.2K 5% 1/6W	
R002	1-247-847-00	CARBON 4.7K 5% 1/6W		R115	1-247-822-00	CARBON 430 5% 1/6W	
R003	1-247-831-00	CARBON 1K 5% 1/6W		R116	1-247-814-00	CARBON 200 5% 1/6W	
R006	1-247-823-00	CARBON 470 5% 1/6W		R117	1-247-855-00	CARBON 10K 5% 1/6W	
R007	1-247-873-00	CARBON 56K 5% 1/6W		R118	1-247-855-00	CARBON 10K 5% 1/6W	
R008	1-247-855-00	CARBON 10K 5% 1/6W		R119	1-247-855-00	CARBON 10K 5% 1/6W	
R012	1-247-867-00	CARBON 33K 5% 1/6W		R120	1-247-855-00	CARBON 10K 5% 1/6W	
R013	1-247-855-00	CARBON 10K 5% 1/6W		R122	1-247-848-00	CARBON 5.1K 5% 1/6W	
R014	1-247-855-00	CARBON 10K 5% 1/6W		R123	1-247-863-00	CARBON 22K 5% 1/6W	
R026	1-247-823-00	CARBON 470 5% 1/6W		R124	1-247-863-00	CARBON 22K 5% 1/6W	
R027	1-247-861-00	CARBON 18K 5% 1/6W		R125	1-247-863-00	CARBON 22K 5% 1/6W	
R028	1-247-831-00	CARBON 1K 5% 1/6W		R126	1-247-839-00	CARBON 2.2K 5% 1/6W	
R029	1-247-825-00	CARBON 560 5% 1/6W		R127	1-247-863-00	CARBON 22K 5% 1/6W	
R030	1-247-815-00	CARBON 220 5% 1/6W		R128	1-247-863-00	CARBON 22K 5% 1/6W	
R031	1-247-822-00	CARBON 430 5% 1/6W		R129	1-247-863-00	CARBON 22K 5% 1/6W	
R033	1-247-809-00	CARBON 120 5% 1/6W		R130	1-247-839-00	CARBON 2.2K 5% 1/6W	
R034	1-247-819-00	CARBON 330 5% 1/6W		R132	1-247-855-00	CARBON 10K 5% 1/6W	
R035	<u>△</u> 1-212-853-00	FUSIBLE 6.8 5% 1/4W	F	R133	1-247-859-00	CARBON 15K 5% 1/6W	
R036	1-247-855-00	CARBON 10K 5% 1/6W		R134	1-247-840-00	CARBON 2.4K 5% 1/6W	
R037	1-247-823-00	CARBON 470 5% 1/6W		R135	1-247-824-00	CARBON 510 5% 1/6W	
R038	1-247-855-00	CARBON 10K 5% 1/6W		R136	1-247-855-00	CARBON 10K 5% 1/6W	
R039	1-247-855-00	CARBON 10K 5% 1/6W		R137	1-247-855-00	CARBON 10K 5% 1/6W	
R040	1-247-855-00	CARBON 10K 5% 1/6W		R138	1-247-822-00	CARBON 430 5% 1/6W	
R042	1-247-855-00	CARBON 10K 5% 1/6W		R139	1-247-842-00	CARBON 3K 5% 1/6W	
R043	1-247-855-00	CARBON 10K 5% 1/6W		R140	1-247-858-00	CARBON 13K 5% 1/6W	
R044	1-247-823-00	CARBON 470 5% 1/6W		R141	1-247-858-00	CARBON 13K 5% 1/6W	
R045	1-247-861-00	CARBON 18K 5% 1/6W					
R046	1-247-831-00	CARBON 1K 5% 1/6W					

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part NO.	Description	Remark	Ref.No	Part NO.	Description	Remark
R142	1-247-838-00	CARBON	2K 5% 1/6W	R228	1-247-879-00	CARBON	100K 5% 1/6W
R143	1-247-842-00	CARBON	3K 5% 1/6W	R229	1-247-831-00	CARBON	1K 5% 1/6W
R144	1-247-895-00	CARBON	470K 5% 1/6W	R230	1-247-887-00	CARBON	220K 5% 1/6W
R146	1-247-853-00	CARBON	8.2K 5% 1/6W	R231	1-247-842-00	CARBON	3K 5% 1/6W
R147	1-247-865-00	CARBON	27K 5% 1/6W	R232	1-247-848-00	CARBON	5.1K 5% 1/6W
R148	1-247-848-00	CARBON	5.1K 5% 1/6W	R233	1-247-848-00	CARBON	5.1K 5% 1/6W
R149	1-247-828-00	CARBON	750 5% 1/6W	R234	1-247-815-00	CARBON	220 5% 1/6W
R150	1-247-814-00	CARBON	200 5% 1/6W	R235	1-247-871-00	CARBON	47K 5% 1/6W
R151	1-247-851-00	CARBON	6.8K 5% 1/6W	R236	1-247-871-00	CARBON	47K 5% 1/6W
R152	1-247-847-00	CARBON	4.7K 5% 1/6W	R237	1-247-839-00	CARBON	2.2K 5% 1/6W
R157	1-247-855-00	CARBON	10K 5% 1/6W	R239	1-247-863-00	CARBON	22K 5% 1/6W
R158	1-247-859-00	CARBON	15K 5% 1/6W	R240	1-247-871-00	CARBON	47K 5% 1/6W
R159	1-247-840-00	CARBON	2.4K 5% 1/6W	R241	1-247-875-00	CARBON	68K 5% 1/6W
R160	1-247-824-00	CARBON	510 5% 1/6W	R243	1-247-850-00	CARBON	6.2K 5% 1/6W
R161	1-247-855-00	CARBON	10K 5% 1/6W	R244	1-247-855-00	CARBON	10K 5% 1/6W
R162	1-247-843-00	CARBON	3.3K 5% 1/6W	R245	1-247-855-00	CARBON	10K 5% 1/6W
R163	1-247-855-00	CARBON	10K 5% 1/6W	R246	1-247-855-00	CARBON	10K 5% 1/6W
R164	1-247-855-00	CARBON	10K 5% 1/6W	R247	1-247-855-00	CARBON	10K 5% 1/6W
R165	1-247-842-00	CARBON	3K 5% 1/6W	R248	1-247-863-00	CARBON	22K 5% 1/6W
R166	1-247-822-00	CARBON	430 5% 1/6W	R249	1-247-855-00	CARBON	10K 5% 1/6W
R167	1-247-858-00	CARBON	13K 5% 1/6W	R253	1-247-855-00	CARBON	10K 5% 1/6W
R168	1-247-838-00	CARBON	2K 5% 1/6W	R255	1-247-867-00	CARBON	33K 5% 1/6W
R169	1-247-858-00	CARBON	13K 5% 1/6W	R256	1-247-863-00	CARBON	22K 5% 1/6W
R170	1-247-842-00	CARBON	3K 5% 1/6W	R262	1-247-851-00	CARBON	6.8K 5% 1/6W
R172	1-247-865-00	CARBON	27K 5% 1/6W	R263	1-247-823-00	CARBON	470 5% 1/6W
R173	1-247-895-00	CARBON	470K 5% 1/6W	R264	1-247-861-00	CARBON	18K 5% 1/6W
R174	1-247-853-00	CARBON	8.2K 5% 1/6W	R265	1-247-861-00	CARBON	18K 5% 1/6W
R175	1-247-836-00	CARBON	1.6K 5% 1/6W	R266	1-247-807-00	CARBON	100 5% 1/6W
R176	1-247-814-00	CARBON	200 5% 1/6W	R267	1-215-442-00	METAL	7.5K 1% 1/6W
R177	1-247-848-00	CARBON	5.1K 5% 1/6W	R268	1-247-843-00	CARBON	3.3K 5% 1/6W
R178	1-247-828-00	CARBON	750 5% 1/6W	R269	1-247-855-00	CARBON	10K 5% 1/6W
R179	1-247-815-00	CARBON	220 5% 1/6W	R270	1-247-855-00	CARBON	10K 5% 1/6W
R180	1-215-465-00	METAL	68K 1% 1/6W	R271	1-247-875-00	CARBON	68K 5% 1/6W
R181	1-215-446-00	METAL	11K 1% 1/6W	R272	1-247-871-00	CARBON	47K 5% 1/6W
R183	1-215-462-00	METAL	51K 1% 1/6W	R273	1-247-871-00	CARBON	47K 5% 1/6W
R184	1-215-462-00	METAL	51K 1% 1/6W	R275	1-247-851-00	CARBON	6.8K 5% 1/6W
R185	1-247-871-00	CARBON	47K 5% 1/6W	R276	1-247-823-00	CARBON	470 5% 1/6W
R190	1-215-446-00	METAL	11K 1% 1/6W	R277	1-247-861-00	CARBON	18K 5% 1/6W
R191	1-215-465-00	METAL	68K 1% 1/6W	R278	1-247-861-00	CARBON	18K 5% 1/6W
R194	1-247-872-00	CARBON	51K 5% 1/6W	R279	1-247-807-00	CARBON	100 5% 1/6W
R200	1-247-872-00	CARBON	51K 5% 1/6W	R280	1-215-421-00	METAL	1K 1% 1/6W
R205	1-247-855-00	CARBON	10K 5% 1/6W	R281	1-247-844-00	CARBON	3.6K 5% 1/6W
R206	1-247-859-00	CARBON	15K 5% 1/6W	R282	1-247-855-00	CARBON	10K 5% 1/6W
R217	1-247-815-00	CARBON	220 5% 1/6W	R283	1-247-855-00	CARBON	10K 5% 1/6W
R218	1-247-871-00	CARBON	47K 5% 1/6W	R284	1-247-869-00	CARBON	39K 5% 1/6W
R220	1-247-875-00	CARBON	68K 5% 1/6W	R285	1-247-871-00	CARBON	47K 5% 1/6W
R221	1-247-850-00	CARBON	6.2K 5% 1/6W	R286	1-247-871-00	CARBON	47K 5% 1/6W
R222	1-247-863-00	CARBON	22K 5% 1/6W	R288	1-215-453-00	METAL	22K 1% 1/6W
R223	1-247-831-00	CARBON	1K 5% 1/6W	R289	1-215-453-00	METAL	22K 1% 1/6W
R224	1-247-887-00	CARBON	220K 5% 1/6W	R290	1-247-807-00	CARBON	100 5% 1/6W
R225	1-247-842-00	CARBON	3K 5% 1/6W	R291	1-247-831-00	CARBON	1K 5% 1/6W
R226	1-247-879-00	CARBON	100K 5% 1/6W	R293	1-247-867-00	CARBON	33K 5% 1/6W
R227	1-247-855-00	CARBON	10K 5% 1/6W	R296	1-247-867-00	CARBON	33K 5% 1/6W

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark	Ref.No	Part NO.	Description	Remark
R297	1-247-848-00	CARBON	5.1K 5% 1/6W	R731	1-247-813-00	CARBON	180 5% 1/6W
R298	1-247-863-00	CARBON	22K 5% 1/6W	R732	1-247-867-00	CARBON	33K 5% 1/6W
R299	1-247-863-00	CARBON	22K 5% 1/6W	R734	1-247-812-00	CARBON	160 5% 1/6W
R300	1-247-863-00	CARBON	22K 5% 1/6W	R735	1-247-812-00	CARBON	160 5% 1/6W
R301	1-247-855-00	CARBON	10K 5% 1/6W	R736	1-247-867-00	CARBON	33K 5% 1/6W
R302	1-247-855-00	CARBON	10K 5% 1/6W	R737	1-247-821-00	CARBON	390 5% 1/6W
R303	1-247-871-00	CARBON	47K 5% 1/6W	R739	1-247-863-00	CARBON	22K 5% 1/6W
R304	1-247-855-00	CARBON	10K 5% 1/6W	R740	1-247-863-00	CARBON	22K 5% 1/6W
R308	1-247-863-00	CARBON	22K 5% 1/6W	R741	1-247-843-00	CARBON	3.3K 5% 1/6W
R310	1-247-847-00	CARBON	4.7K 5% 1/6W	R746	1-247-863-00	CARBON	22K 5% 1/6W
R311	1-247-855-00	CARBON	10K 5% 1/6W	R748	1-247-843-00	CARBON	3.3K 5% 1/6W
R312	1-247-843-00	CARBON	3.3K 5% 1/6W	R757	1-247-825-00	CARBON	560 5% 1/6W
R313	1-247-855-00	CARBON	10K 5% 1/6W	R759	1-247-823-00	CARBON	470 5% 1/6W
R322	1-247-879-00	CARBON	100K 5% 1/6W	R779	1-247-855-00	CARBON	10K 5% 1/6W
R323	1-247-839-00	CARBON	2.2K 5% 1/6W	R780	1-247-825-00	CARBON	560 5% 1/6W
R324	1-247-871-00	CARBON	47K 5% 1/6W	R781	1-247-825-00	CARBON	560 5% 1/6W
R325	1-247-879-00	CARBON	100K 5% 1/6W	R782	1-247-867-00	CARBON	33K 5% 1/6W
R326	1-247-831-00	CARBON	1K 5% 1/6W	R783	1-247-867-00	CARBON	33K 5% 1/6W
R327	1-247-859-00	CARBON	15K 5% 1/6W	R784	1-247-825-00	CARBON	560 5% 1/6W
R330	1-247-831-00	CARBON	1K 5% 1/6W	R785	1-247-825-00	CARBON	560 5% 1/6W
R332	1-247-862-00	CARBON	20K 5% 1/6W	R787	1-247-855-00	CARBON	10K 5% 1/6W
R338	1-247-862-00	CARBON	20K 5% 1/6W	R788 Δ	1-247-831-00	CARBON	1K 5% 1/6W
R343	1-247-807-00	CARBON	100 5% 1/6W	R789	1-247-896-00	CARBON	510K 5% 1/6W
R344	1-247-807-00	CARBON	100 5% 1/6W	R790	1-247-855-00	CARBON	10K 5% 1/6W
R345	1-247-820-00	CARBON	360 5% 1/6W	R793	1-247-855-00	CARBON	10K 5% 1/6W
R346	1-247-820-00	CARBON	360 5% 1/6W	R794	1-247-847-00	CARBON	4.7K 5% 1/6W
R351	1-247-843-00	CARBON	3.3K 5% 1/6W	R795	1-247-847-00	CARBON	4.7K 5% 1/6W
R352	1-247-857-00	CARBON	12K 5% 1/6W	R796	1-247-839-00	CARBON	2.2K 5% 1/6W
R601	1-247-871-00	CARBON	47K 5% 1/6W	R797	1-247-839-00	CARBON	2.2K 5% 1/6W
R701	1-247-855-00	CARBON	10K 5% 1/6W	R798	1-247-803-00	CARBON	68 5% 1/6W
R702	1-247-855-00	CARBON	10K 5% 1/6W	R799	1-247-831-00	CARBON	1K 5% 1/6W
R703	1-247-847-00	CARBON	4.7K 5% 1/6W	R800	1-247-831-00	CARBON	1K 5% 1/6W
R706	1-247-843-00	CARBON	3.3K 5% 1/6W	R801 Δ	1-247-815-00	CARBON	220 5% 1/6W
R707	1-247-847-00	CARBON	4.7K 5% 1/6W	R802 Δ	1-247-815-00	CARBON	220 5% 1/6W
R708	1-247-843-00	CARBON	3.3K 5% 1/6W	R803	1-247-875-00	CARBON	68K 5% 1/6W
R712	1-247-867-00	CARBON	33K 5% 1/6W	R804	1-247-879-00	CARBON	100K 5% 1/6W
R713	1-247-855-00	CARBON	10K 5% 1/6W	R805	1-247-879-00	CARBON	100K 5% 1/6W
R714	1-247-867-00	CARBON	33K 5% 1/6W	R806	1-247-855-00	CARBON	10K 5% 1/6W
R715	1-247-867-00	CARBON	33K 5% 1/6W	R807	1-247-815-00	CARBON	220 5% 1/6W
R716	1-247-855-00	CARBON	10K 5% 1/6W	R808	1-247-815-00	CARBON	220 5% 1/6W
R718	1-247-849-00	CARBON	5.6K 5% 1/6W	R810	1-247-873-00	CARBON	56K 5% 1/6W
R719	1-247-849-00	CARBON	5.6K 5% 1/6W	R811	1-247-855-00	CARBON	10K 5% 1/6W
R720	1-247-849-00	CARBON	5.6K 5% 1/6W	R812	1-247-855-00	CARBON	10K 5% 1/6W
R721	1-247-849-00	CARBON	5.6K 5% 1/6W	R815	1-247-855-00	CARBON	10K 5% 1/6W
R722	1-247-867-00	CARBON	33K 5% 1/6W	R816	1-247-895-00	CARBON	470K 5% 1/6W
R724	1-247-867-00	CARBON	33K 5% 1/6W	R817	1-247-879-00	CARBON	100K 5% 1/6W
R725	1-247-855-00	CARBON	10K 5% 1/6W	R818	1-247-895-00	CARBON	470K 5% 1/6W
R726	1-247-867-00	CARBON	33K 5% 1/6W	R819	1-247-895-00	CARBON	470K 5% 1/6W
R727	1-247-867-00	CARBON	33K 5% 1/6W	R820	1-247-895-00	CARBON	470K 5% 1/6W
R728	1-247-855-00	CARBON	10K 5% 1/6W	R821	1-247-895-00	CARBON	470K 5% 1/6W
R729	1-247-839-00	CARBON	2.2K 5% 1/6W	R828	1-247-887-00	CARBON	220K 5% 1/6W
R730	1-247-813-00	CARBON	180 5% 1/6W	R829	1-247-823-00	CARBON	470 5% 1/6W
				R830	1-247-819-00	CARBON	330 5% 1/6W

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

AF-3**AM-5**

Ref.No	Part NO.	Description	Remark
R831	1-247-831-00	CARBON 1K 5% 1/6W	
R832	1-247-871-00	CARBON 47K 5% 1/6W	
R833	1-247-867-00	CARBON 33K 5% 1/6W	
R834	1-247-848-00	CARBON 5.1K 5% 1/6W	
R835	1-247-847-00	CARBON 4.7K 5% 1/6W	
R836	1-247-855-00	CARBON 10K 5% 1/6W	
R837	1-247-855-00	CARBON 10K 5% 1/6W	
R838	1-247-831-00	CARBON 1K 5% 1/6W	
R839	1-247-831-00	CARBON 1K 5% 1/6W	
R840	1-247-831-00	CARBON 1K 5% 1/6W	
R841	1-247-831-00	CARBON 1K 5% 1/6W	
R844	1-247-855-00	CARBON 10K 5% 1/6W	
R845	1-247-819-00	CARBON 330 5% 1/6W	
R846	1-247-829-00	CARBON 820 5% 1/6W	

VARIABLE RESISTOR

RV005	1-228-996-00	RES, ADJ, METAL GLAZE 47K	
RV006	1-228-996-00	RES, ADJ, METAL GLAZE 47K	
RV010	1-228-996-00	RES, ADJ, METAL GLAZE 47K	
RV012	1-228-996-00	RES, ADJ, METAL GLAZE 47K	
RV013	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV014	1-228-990-00	RES, ADJ, METAL GLAZE 1K	
RV015	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K	
RV016	1-228-990-00	RES, ADJ, METAL GLAZE 1K	
RV017	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K	
RV018	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV019	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV020	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV021	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV022	1-228-997-00	RES, ADJ, METAL GLAZE 100K	
RV023	1-228-997-00	RES, ADJ, METAL GLAZE 100K	

TRANSFORMER

T002	1-404-545-11	COIL, Q DET	
T004	1-404-545-11	COIL, Q DET	
T006	1-404-544-11	COIL, Q DET	
T008	1-404-544-11	COIL, Q DET	

♣:A-6713-203-A AM-5 BOARD, COMPLETE

♣:3-684-075-01 CASE (MAIN), SHIELD, AM
♣:3-684-076-01 LID, UPPER, AM SHIELD CASE
♣:3-684-077-03 LID, BOTTOM, AM SHIELD CASE

CAPACITOR

C501	1-123-356-00	ELECT 10MF 20% 16V	
C505	1-123-330-00	ELECT 22MF 20% 16V	
C506	1-123-333-00	ELECT 100MF 20% 16V	
C507	1-123-333-00	ELECT 100MF 20% 16V	
C508	1-123-369-00	ELECT 4.7MF 20% 25V	
C509	1-123-369-00	ELECT 4.7MF 20% 25V	
C510	1-130-497-00	MYLAR 0.15MF 5% 50V	
C511	1-130-486-51	MYLAR 0.018MF 5% 50V	
C512	1-123-333-00	ELECT 100MF 20% 16V	
C513	1-123-379-00	ELECT 0.47MF 20% 50V	
C514	1-123-330-00	ELECT 22MF 20% 16V	

Ref.No	Part NO.	Description	Remark
C515	1-102-111-00	CERAMIC 270PF 10% 50V	
C516	1-123-382-00	ELECT 3.3MF 20% 50V	
C517	1-130-507-51	MYLAR 0.0018MF 10% 50V	
C518	1-123-318-00	ELECT 33MF 20% 10V	
C519	1-130-516-51	MYLAR 0.01MF 10% 50V	
C520	1-123-382-00	ELECT 3.3MF 20% 50V	
C521	1-123-369-00	ELECT 4.7MF 20% 25V	
C522	1-123-333-00	ELECT 100MF 20% 16V	
C524	1-127-475-00	ELECT(SOLID) 0.22MF 5% 25V	
C525	1-130-502-00	MYLAR 680PF 10% 50V	
C526	1-123-332-00	ELECT 47MF 20% 16V	
C527	1-130-479-00	MYLAR 0.0047MF 5% 50V	
C528	1-130-477-00	MYLAR 0.0033MF 5% 50V	
C529	1-129-709-00	FILM 0.0039MF 10% 630V	
C530	1-102-108-00	CERAMIC 150PF 10% 50V	
C531	1-123-333-00	ELECT 100MF 20% 16V	
C533	1-136-155-00	MYLAR 0.015MF 10% 50V	
C534	1-123-332-00	ELECT 47MF 20% 16V	
C535	1-102-111-00	CERAMIC 270PF 10% 50V	
C536	1-123-379-00	ELECT 0.47MF 20% 50V	
C537	1-123-333-00	ELECT 100MF 20% 16V	
C539	1-123-356-00	ELECT 10MF 20% 16V	

CONNECTOR

CN501♣	1-560-893-00	PIN, CONNECTOR 5P	
CN502♣	1-560-893-00	PIN, CONNECTOR 5P	
CN503♣	1-564-030-00	PIN, CONNECTOR 5P	

TRIMMER

CT501	1-141-215-00	CAP, TRIMAR	
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DIODE

D506	8-719-911-19	DIODE 1SS119	
D507 =>	8-719-200-02	DIODE 10E2	
D508	8-719-100-16	DIODE RD3.3E-B1	

IC

IC501	8-759-800-79	IC LA7048	
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COIL

L501	1-407-963-00	MICRO INDUCTOR 15MMH	
L502	1-407-508-00	MICRO INDUCTOR 22MMH	
L503	1-407-710-00	MICRO INDUCTOR 270UH	
L504	1-407-508-00	MICRO INDUCTOR 22MMH	

TRANSISTOR

Q501	8-729-988-12	TRANSISTOR 2SA881	
Q502 =>	8-729-245-83	TRANSISTOR 2SC2458	
Q504	8-729-967-32	TRANSISTOR 2SC2673	
Q505	8-729-663-47	TRANSISTOR 2SC945-P	
Q506	8-729-663-47	TRANSISTOR 2SC945-P	
Q507 =>	8-729-204-83	TRANSISTOR 2SA1048-GR	
Q508 =>	8-729-245-83	TRANSISTOR 2SC2458	
Q509 =>	8-729-245-83	TRANSISTOR 2SC2458	
Q510 =>	8-729-245-83	TRANSISTOR 2SC2458	
Q511 =>	8-729-245-83	TRANSISTOR 2SC2458	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark		
Q512	=>8-729-245-83	TRANSISTOR 2SC2458			
Q513	=>8-729-245-83	TRANSISTOR 2SC2458			
<u>RESISTOR</u>					
R503	1-247-839-00	CARBON	2.2K	5%	1/6W
R504	1-247-863-00	CARBON	22K	5%	1/6W
R505	1-247-871-00	CARBON	47K	5%	1/6W
R506	△ 1-247-660-00	CARBON	82	5%	1/4W F
R507	1-247-847-00	CARBON	4.7K	5%	1/6W
R508	1-247-867-00	CARBON	33K	5%	1/6W
R509	1-247-847-00	CARBON	4.7K	5%	1/6W
R510	1-247-855-00	CARBON	10K	5%	1/6W
R511	1-247-867-00	CARBON	33K	5%	1/6W
R512	△ 1-247-819-00	CARBON	330	5%	1/6W
R513	1-247-855-00	CARBON	10K	5%	1/6W
R514	1-247-903-00	CARBON	1M	5%	1/6W
R515	1-247-849-00	CARBON	5.6K	5%	1/6W
R516	1-247-819-00	CARBON	330	5%	1/6W
R517	1-210-825-00	SOLID	3.3M	5%	1/4W
R518	1-247-851-00	CARBON	6.8K	5%	1/6W
R519	1-247-859-00	CARBON	15K	5%	1/6W
R520	1-247-819-00	CARBON	330	5%	1/6W
R521	1-247-891-00	CARBON	330K	5%	1/6W
R522	1-247-883-00	CARBON	150K	5%	1/6W
R524	1-247-783-00	CARBON	10	5%	1/6W
R526	1-247-863-00	CARBON	22K	5%	1/6W
R528	1-247-853-00	CARBON	8.2K	5%	1/6W
R530	1-247-849-00	CARBON	5.6K	5%	1/6W
R531	1-247-829-00	CARBON	820	5%	1/6W
R532	1-247-862-00	CARBON	20K	5%	1/6W
R533	△ 1-246-980-00	CARBON	3.3	5%	1/8W F
R534	1-247-839-00	CARBON	2.2K	5%	1/6W
R535	1-247-839-00	CARBON	2.2K	5%	1/6W
R536	1-247-849-00	CARBON	5.6K	5%	1/6W
R537	1-247-855-00	CARBON	10K	5%	1/6W
R538	1-247-863-00	CARBON	22K	5%	1/6W
R539	1-247-831-00	CARBON	1K	5%	1/6W
R540	1-247-838-00	CARBON	2K	5%	1/6W
R541	1-247-877-00	CARBON	82K	5%	1/6W
R542	1-247-865-00	CARBON	27K	5%	1/6W
R543	1-247-871-00	CARBON	47K	5%	1/6W
R545	1-247-871-00	CARBON	47K	5%	1/6W
R546	1-247-841-00	CARBON	2.7K	5%	1/6W
R547	1-247-863-00	CARBON	22K	5%	1/6W
R548	1-247-843-00	CARBON	3.3K	5%	1/6W
R550	1-247-875-00	CARBON	68K	5%	1/6W
R551	1-247-855-00	CARBON	10K	5%	1/6W
R552	1-247-783-00	CARBON	10	5%	1/6W
R561	1-247-840-00	CARBON	2.4K	5%	1/6W
R562	1-247-855-00	CARBON	10K	5%	1/6W
R563	1-247-895-00	CARBON	470K	5%	1/6W

Ref.No	Part No.	Description	Remark
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VARIABLE RESISTOR

RV501	1-228-748-00	RES, ADJ, CARBON 10K	
RV502	△ 1-228-989-00	RES, ADJ, METAL GLAZE 470	
RV503	1-228-751-00	RES, ADJ, CARBON 100K	

TRANSFORMER

T501	1-433-237-00	TRANSFORMER, OSCILLATOR	
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△: A-6715-224-B SS-28 BOARD, COMPLETE

CAPACITOR

C001	1-123-380-00	ELECT	1MF	20%	50V
C002	1-123-356-00	ELECT	10MF	20%	16V
C003	1-161-059-00	CERAMIC	0.047MF	10%	25V
C004	1-123-333-00	ELECT	100MF	20%	16V
C005	1-161-013-00	CERAMIC	0.01MF	10%	25V
C006	1-123-318-00	ELECT	33MF	20%	10V
C007	1-123-369-00	ELECT	4.7MF	20%	25V
C008	1-161-059-00	CERAMIC	0.047MF	10%	25V
C009	1-161-059-00	CERAMIC	0.047MF	10%	25V
C301	1-123-382-00	ELECT	3.3MF	20%	50V
C302	1-161-059-00	CERAMIC	0.047MF	10%	25V
C305	1-123-382-00	ELECT	3.3MF	20%	50V
C306	1-161-059-00	CERAMIC	0.047MF	10%	25V
C307	1-130-482-00	MYLAR	0.0082MF	5%	50V
C308	1-130-516-00	MYLAR	0.01MF	10%	50V
C309	1-130-516-00	MYLAR	0.01MF	10%	50V
C310	1-161-054-00	CERAMIC	0.018MF	10%	25V
C311	1-161-054-00	CERAMIC	0.018MF	10%	25V
C312	1-123-330-00	ELECT	22MF	20%	16V
C314	1-161-054-00	CERAMIC	0.018MF	10%	25V
C315	1-161-013-00	CERAMIC	0.01MF	10%	25V
C316	1-123-356-00	ELECT	10MF	20%	16V
C317	1-123-380-00	ELECT	1MF	20%	50V
C318	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C319	1-161-059-00	CERAMIC	0.047MF	10%	25V
C320	1-124-429-00	ELECT	0.68MF	20%	50V
C321	1-161-059-00	CERAMIC	0.047MF	10%	25V
C322	1-161-059-00	CERAMIC	0.047MF	10%	25V
C323	1-123-382-00	ELECT	3.3MF	20%	50V
C324	1-131-409-00	ELECT(SOLID)	0.33MF	5%	25V
C326	1-123-310-00	ELECT	470MF	20%	10V
C327	1-123-308-00	ELECT	220MF	20%	10V
C328	1-161-059-00	CERAMIC	0.047MF	10%	25V
C329	1-131-357-00	TANTALUM	4.7MF	20%	25V
C330	1-123-381-00	ELECT	2.2MF	20%	50V

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C331	1-123-381-00	ELECT	2.2MF	20%	50V	CN002:1-560-891-00	PIN, CONNECTOR 3P
C332	1-161-059-00	CERAMIC	0.047MF	10%	25V	CN003:1-560-892-00	PIN, CONNECTOR 4P
C333	1-131-357-00	TANTALUM	4.7MF	20%	25V	CN004:1-560-890-00	PIN, CONNECTOR 2P
C334	1-102-106-00	CERAMIC	100PF	10%	50V	CN301:1-560-892-00	PIN, CONNECTOR 4P
C335	1-123-333-00	ELECT	100MF	20%	16V	CN302:1-560-892-00	PIN, CONNECTOR 4P
C336	1-123-333-00	ELECT	100MF	20%	16V	CN303:1-560-890-00	PIN, CONNECTOR 2P
C337	1-130-479-00	MYLAR	0.0047MF	5%	50V	CN304:1-560-890-00	PIN, CONNECTOR 2P
C338	1-123-332-00	ELECT	47MF	20%	16V	CN305:1-560-897-00	PIN, CONNECTOR 9P
C339	1-161-059-00	CERAMIC	0.047MF	10%	25V	CN306:1-560-895-00	PIN, CONNECTOR 7P
C340	1-123-381-00	ELECT	2.2MF	20%	50V	CN307:1-560-466-00	PIN, CONNECTOR 3P
C341	1-123-306-00	ELECT	47MF	20%	10V	CN308:1-560-894-00	PIN, CONNECTOR 6P
C342	1-123-306-00	ELECT	47MF	20%	10V	CN309:1-560-892-00	PIN, CONNECTOR 4P
C343	1-161-054-00	CERAMIC	0.018MF	10%	25V	CN601:1-560-895-00	PIN, CONNECTOR 7P
C344	1-161-013-00	CERAMIC	0.01MF	10%	25V	CN602:1-560-897-00	PIN, CONNECTOR 9P
C345	1-161-055-00	CERAMIC	0.022MF	10%	25V	CN603:1-560-890-00	PIN, CONNECTOR 2P
C346	1-161-040-00	CERAMIC	0.0012MF	10%	25V	CN604:1-560-890-00	PIN, CONNECTOR 2P
C347	1-161-054-00	CERAMIC	0.018MF	10%	25V	CN605:1-560-890-00	PIN, CONNECTOR 2P
C348	1-161-013-00	CERAMIC	0.01MF	10%	25V	CN606:1-560-892-00	PIN, CONNECTOR 4P
C349	1-123-382-00	ELECT	3.3MF	20%	50V	CN607:1-560-890-00	PIN, CONNECTOR 2P
C350	1-127-479-00	ELECT(SOLID)	1MF	5%	25V	CN608:1-560-892-00	PIN, CONNECTOR 4P
C351	1-161-057-00	CERAMIC	0.033MF	10%	25V	CN609:1-560-893-00	PIN, CONNECTOR 5P
C352	1-123-330-00	ELECT	22MF	20%	16V	CN610:1-560-891-00	PIN, CONNECTOR 3P
C353	1-161-057-00	CERAMIC	0.033MF	10%	25V	CN611:1-560-891-00	PIN, CONNECTOR 3P
C354	1-123-369-00	ELECT	4.7MF	20%	25V	CN612:1-560-896-00	PIN, CONNECTOR 8P
C355	1-161-013-00	CERAMIC	0.01MF	10%	25V	CN613:1-560-895-00	PIN, CONNECTOR 7P
C356	1-123-332-00	ELECT	47MF	20%	16V	CN614:1-560-897-00	PIN, CONNECTOR 9P
C357	1-161-013-00	CERAMIC	0.01MF	10%	25V	CN615:1-560-893-00	PIN, CONNECTOR 5P
C358	1-161-013-00	CERAMIC	0.01MF	10%	25V		
C359	1-123-369-00	ELECT	4.7MF	20%	25V		
C360	1-123-333-00	ELECT	100MF	20%	16V		
C361	1-161-013-00	CERAMIC	0.01MF	10%	25V		
C362	1-130-493-00	MYLAR	0.068MF	5%	50V		
C601	1-129-794-00	FILM	0.0033MF	5%	100V		
C602	1-129-794-00	FILM	0.0033MF	5%	100V		
C603	1-136-161-00	MYLAR	0.047MF	10%	50V		
C604	1-136-157-00	MYLAR	0.022MF	10%	50V		
C605	1-136-161-00	MYLAR	0.047MF	10%	50V		
C606	1-123-330-00	ELECT	22MF	20%	16V		
C607	1-123-331-00	ELECT	33MF	20%	25V		
C608	1-123-331-00	ELECT	33MF	20%	25V		
C610	1-123-380-00	ELECT	1MF	20%	50V		
C611	1-123-306-00	ELECT	47MF	20%	10V		
C612	1-161-059-00	CERAMIC	0.047MF	10%	25V		
C801	1-102-529-00	CERAMIC	100PF	5%	50V		
C802	1-102-529-00	CERAMIC	100PF	5%	50V		
C901	1-101-004-00	CERAMIC	0.01MF		50V		
<u>FILTER</u>				<u>DIODE</u>			
CF601	1-527-822-00	OSCILLATOR, CERAMIC		D001	8-719-000-06	DIODE MC921	
<u>CONNECTOR</u>				D002	8-719-911-19	DIODE 1SS119	
CN001:1-560-891-00	PIN, CONNECTOR 3P			D003	8-719-911-19	DIODE 1SS119	
				D004	8-719-911-19	DIODE 1SS119	
				D005	8-719-200-02	DIODE 10E2	
				D006	8-719-911-19	DIODE 1SS119	
				D007	8-719-911-19	DIODE 1SS119	
				D008	8-719-911-19	DIODE 1SS119	
				D009	8-719-911-19	DIODE 1SS119	
				D010	8-719-911-19	DIODE 1SS119	
				D011	8-719-911-19	DIODE 1SS119	
				D012	8-719-911-19	DIODE 1SS119	
				D303	8-719-100-57	DIODE RD10E-B2	
				D304	8-719-162-07	DIODE RD6.2E-B	
				D305	8-719-911-19	DIODE 1SS119	
				D306	8-719-000-04	DIODE MC911	
				D307	8-719-812-31	DIODE TLR123	
				D308	8-719-000-06	DIODE MC921	
				D309	8-719-911-19	DIODE 1SS119	
				D310	8-719-000-12	DIODE MC931	
				D311	8-719-000-06	DIODE MC921	
				D312	8-719-911-19	DIODE 1SS119	
				D313	8-719-911-19	DIODE 1SS119	
				D601	8-719-911-19	DIODE 1SS119	

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
D602	8-719-000-06	DIODE MC921		Q026	=>8-729-245-83	TRANSISTOR 2SC2458	
D603	8-719-911-19	DIODE 1SS119		Q027	=>8-729-245-83	TRANSISTOR 2SC2458	
D604	8-719-911-19	DIODE 1SS119		Q028	8-729-374-02	TRANSISTOR 2SB740	
D605	8-719-911-19	DIODE 1SS119		Q029	=>8-729-177-43	TRANSISTOR 2SD774	
D606	8-719-911-19	DIODE 1SS119		Q030	8-729-374-02	TRANSISTOR 2SB740	
D607	8-719-911-19	DIODE 1SS119		Q031	=>8-729-177-43	TRANSISTOR 2SD774	
D608	8-719-911-19	DIODE 1SS119		Q032	=>8-729-245-83	TRANSISTOR 2SC2458	
<u>IC</u>				Q033	=>8-729-245-83	TRANSISTOR 2SC2458	
IC001	8-759-135-80	IC UPC358C		Q034	=>8-729-245-83	TRANSISTOR 2SC2458	
IC301	=>8-751-941-05	IC CX194B-5		Q035	=>8-729-245-83	TRANSISTOR 2SC2458	
IC302	8-759-135-80	IC UPC358C		Q036	=>8-729-245-83	TRANSISTOR 2SC2458	
IC303	8-759-145-58	IC UPC4558C		Q037	=>8-729-245-83	TRANSISTOR 2SC2458	
IC304	8-759-132-40	IC UPC324C		Q038	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
IC305	8-759-240-53	IC TC4053BP		Q301	=>8-729-177-43	TRANSISTOR 2SD774	
IC306	8-759-132-40	IC UPC324C		Q302	=>8-729-245-83	TRANSISTOR 2SC2458	
IC307	8-759-240-53	IC TC4053BP		Q305	=>8-729-245-83	TRANSISTOR 2SC2458	
IC601	8-759-910-55	IC MB88421-141M		Q306	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
IC602	8-759-800-72	IC LA7205		Q307	8-729-900-80	TRANSISTOR DTC114ES	
<u>COIL</u>				Q308	8-729-900-36	TRANSISTOR DTC124ES	
L601	1-408-418-00	MICRO INDUCTOR 56UH		Q309	=>8-729-245-83	TRANSISTOR 2SC2458	
<u>IC LINK</u>				Q310	8-729-900-89	TRANSISTOR DTC144ES	
PS001A	1-532-637-11	LINK, IC (ICP-N25)		Q311	=>8-729-245-83	TRANSISTOR 2SC2458	
PS002A	1-532-679-11	LINK, IC (ICP-N15)		Q312	=>8-729-245-83	TRANSISTOR 2SC2458	
PS003A	1-532-605-11	LINK, IC (ICP-N10)		Q313	=>8-729-245-83	TRANSISTOR 2SC2458	
<u>TRANSISTOR</u>				Q314	=>8-729-245-83	TRANSISTOR 2SC2458	
Q001	=>8-729-245-83	TRANSISTOR 2SC2458		Q315	=>8-729-245-83	TRANSISTOR 2SC2458	
Q002	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q316	=>8-729-245-83	TRANSISTOR 2SC2458	
Q003	=>8-729-245-83	TRANSISTOR 2SC2458		Q317	8-729-900-89	TRANSISTOR DTC144ES	
Q004	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q318	=>8-729-245-83	TRANSISTOR 2SC2458	
Q005	=>8-729-245-83	TRANSISTOR 2SC2458		Q319	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q006	=>8-729-245-83	TRANSISTOR 2SC2458		Q320	=>8-729-177-43	TRANSISTOR 2SD774	
Q007	=>8-729-245-83	TRANSISTOR 2SC2458		Q321	A 8-729-117-54	TRANSISTOR 2SA1175	
Q008	=>8-729-245-83	TRANSISTOR 2SC2458		Q322	A 8-729-805-13	TRANSISTOR 2SC1475-13	
Q009	=>8-729-245-83	TRANSISTOR 2SC2458		Q323	=>8-729-245-83	TRANSISTOR 2SC2458	
Q010	=>8-729-245-83	TRANSISTOR 2SC2458		Q324	=>8-729-245-83	TRANSISTOR 2SC2458	
Q011	=>8-729-245-83	TRANSISTOR 2SC2458		Q325	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q012	=>8-729-245-83	TRANSISTOR 2SC2458		Q326	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q013	=>8-729-245-83	TRANSISTOR 2SC2458		Q327	=>8-729-245-83	TRANSISTOR 2SC2458	
Q014	=>8-729-245-83	TRANSISTOR 2SC2458		Q328	=>8-729-245-83	TRANSISTOR 2SC2458	
Q015	=>8-729-245-83	TRANSISTOR 2SC2458		Q330	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q016	=>8-729-245-83	TRANSISTOR 2SC2458		Q601	=>8-729-245-83	TRANSISTOR 2SC2458	
Q017	8-729-900-89	TRANSISTOR DTC144ES		Q602	8-729-900-89	TRANSISTOR DTC144ES	
Q018	=>8-729-245-83	TRANSISTOR 2SC2458		Q603	8-729-900-89	TRANSISTOR DTC144ES	
Q020	=>8-729-204-83	TRANSISTOR 2SA1048-GR		Q604	=>8-729-177-43	TRANSISTOR 2SD774	
Q021	=>8-729-177-32	TRANSISTOR 2SD773		Q605	8-729-116-42	TRANSISTOR 2SD1164	
Q022	=>8-729-245-83	TRANSISTOR 2SC2458		Q606	8-729-900-89	TRANSISTOR DTC144ES	
Q023	8-729-900-36	TRANSISTOR DTC124ES		Q607	8-729-900-89	TRANSISTOR DTC144ES	
Q024	=>8-729-245-83	TRANSISTOR 2SC2458		Q608	=>8-729-177-43	TRANSISTOR 2SD774	
Q025	=>8-729-245-83	TRANSISTOR 2SC2458		Q609	8-729-116-42	TRANSISTOR 2SD1164	
				Q610	8-729-900-89	TRANSISTOR DTC144ES	
				Q611	=>8-729-245-83	TRANSISTOR 2SC2458	
				Q612	=>8-729-245-83	TRANSISTOR 2SC2458	
				Q613	=>8-729-245-83	TRANSISTOR 2SC2458	

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Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark		
Q614	8-729-900-89	TRANSISTOR DTC144ES				R041	1-247-855-00	CARBON	10K	5%	1/6W
Q615	8-729-987-42	TRANSISTOR 2SA874				R042	1-247-863-00	CARBON	22K	5%	1/6W
Q616	=>8-729-204-83	TRANSISTOR 2SA1048-GR				R043	1-247-865-00	CARBON	27K	5%	1/6W
Q617	=>8-729-204-83	TRANSISTOR 2SA1048-GR				R044	1-247-855-00	CARBON	10K	5%	1/6W
Q618	=>8-729-204-83	TRANSISTOR 2SA1048-GR									
Q619	=>8-729-204-83	TRANSISTOR 2SA1048-GR				R045	1-247-871-00	CARBON	47K	5%	1/6W
Q620	=>8-729-204-83	TRANSISTOR 2SA1048-GR				R046	1-247-863-00	CARBON	22K	5%	1/6W
Q621	=>8-729-204-83	TRANSISTOR 2SA1048-GR				R047	1-247-855-00	CARBON	10K	5%	1/6W
Q622	=>8-729-245-83	TRANSISTOR 2SC2458				R048	1-247-845-00	CARBON	3.9K	5%	1/6W
Q623	=>8-729-245-83	TRANSISTOR 2SC2458				R049	1-247-831-00	CARBON	1K	5%	1/6W
Q624	=>8-729-245-83	TRANSISTOR 2SC2458				R050	1-247-873-00	CARBON	56K	5%	1/6W
Q901	=>8-729-245-83	TRANSISTOR 2SC2458				R051	1-247-831-00	CARBON	1K	5%	1/6W
RESISTOR						R052	1-247-869-00	CARBON	39K	5%	1/6W
R001	1-247-871-00	CARBON	47K	5%	1/6W	R053	1-247-871-00	CARBON	47K	5%	1/6W
R002	1-247-855-00	CARBON	10K	5%	1/6W	R054	1-247-855-00	CARBON	10K	5%	1/6W
R003	1-247-863-00	CARBON	22K	5%	1/6W						
R004	1-247-125-00	CARBON	560	5%	1/4W	R055	1-247-871-00	CARBON	47K	5%	1/6W
R005	1-247-128-00	CARBON	750	5%	1/4W	R056	1-247-871-00	CARBON	47K	5%	1/6W
						R057	1-247-855-00	CARBON	10K	5%	1/6W
R006	1-247-855-00	CARBON	10K	5%	1/6W	R058	1-247-871-00	CARBON	47K	5%	1/6W
R007	1-247-871-00	CARBON	47K	5%	1/6W	R059	1-247-871-00	CARBON	47K	5%	1/6W
R008	1-247-855-00	CARBON	10K	5%	1/6W						
R009	1-247-871-00	CARBON	47K	5%	1/6W	R060	1-247-855-00	CARBON	10K	5%	1/6W
R010	1-247-871-00	CARBON	47K	5%	1/6W	R061	1-247-863-00	CARBON	22K	5%	1/6W
						R062	1-247-863-00	CARBON	22K	5%	1/6W
R011	1-247-871-00	CARBON	47K	5%	1/6W	R063	1-247-232-00	CARBON	470	5%	1/2W
R012	1-247-850-00	CARBON	6.2K	5%	1/6W	R064	1-247-849-00	CARBON	5.6K	5%	1/6W
R013	1-247-853-00	CARBON	8.2K	5%	1/6W						
R014	1-247-871-00	CARBON	47K	5%	1/6W	R065	1-247-831-00	CARBON	1K	5%	1/6W
R016	1-247-855-00	CARBON	10K	5%	1/6W	R066	1-212-360-00	METAL OXIDE	1	5%	1W F
						R067	1-247-849-00	CARBON	5.6K	5%	1/6W
R017	1-247-871-00	CARBON	47K	5%	1/6W	R068	1-247-831-00	CARBON	1K	5%	1/6W
R018	1-247-871-00	CARBON	47K	5%	1/6W	R069	1-247-232-00	CARBON	470	5%	1/2W
R020	1-247-831-00	CARBON	1K	5%	1/6W						
R021	1-247-855-00	CARBON	10K	5%	1/6W	R070	1-247-855-00	CARBON	10K	5%	1/6W
						R071	1-247-863-00	CARBON	22K	5%	1/6W
R022	1-247-847-00	CARBON	4.7K	5%	1/6W	R072	1-247-863-00	CARBON	22K	5%	1/6W
R023	1-247-871-00	CARBON	47K	5%	1/6W	R073	1-247-871-00	CARBON	47K	5%	1/6W
R024	1-247-871-00	CARBON	47K	5%	1/6W	R075	1-247-863-00	CARBON	22K	5%	1/6W
R025	1-247-127-00	CARBON	680	5%	1/4W						
R026	1-247-879-00	CARBON	100K	5%	1/6W	R076	1-247-871-00	CARBON	47K	5%	1/6W
						R077	1-247-821-00	CARBON	390	5%	1/6W
R027	1-247-855-00	CARBON	10K	5%	1/6W	R078	1-247-855-00	CARBON	10K	5%	1/6W
R028	1-247-831-00	CARBON	1K	5%	1/6W	R079	1-247-855-00	CARBON	10K	5%	1/6W
R031	1-247-875-00	CARBON	68K	5%	1/6W	R080	1-247-855-00	CARBON	10K	5%	1/6W
R032	1-247-871-00	CARBON	47K	5%	1/6W	R081	1-247-903-00	CARBON	1M	5%	1/6W
R033	1-212-366-00	METAL OXIDE	3.3	5%	1W F	R082	1-247-831-00	CARBON	1K	5%	1/6W
R034	1-247-819-00	CARBON	330	5%	1/6W	R083	1-247-903-00	CARBON	1M	5%	1/6W
R035	1-247-871-00	CARBON	47K	5%	1/6W	R084	1-247-879-00	CARBON	100K	5%	1/6W
R036	1-247-871-00	CARBON	47K	5%	1/6W	R085	1-247-879-00	CARBON	100K	5%	1/6W
R037	1-247-855-00	CARBON	10K	5%	1/6W	R086	1-206-640-00	METAL OXIDE	100	5%	2W F
R038	1-247-863-00	CARBON	22K	5%	1/6W	R316	1-247-871-00	CARBON	47K	5%	1/6W
						R317	1-247-863-00	CARBON	22K	5%	1/6W
						R318	1-247-863-00	CARBON	22K	5%	1/6W
						R319	1-247-871-00	CARBON	47K	5%	1/6W
						R320	1-247-871-00	CARBON	47K	5%	1/6W
						R321	1-247-859-00	CARBON	15K	5%	1/6W
						R322	1-247-857-00	CARBON	12K	5%	1/6W

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R323	1-247-845-00	CARBON	3.9K 5% 1/6W	R376	1-247-849-00	CARBON	5.6K 5% 1/6W
R326	1-247-838-00	CARBON	2K 5% 1/6W	R377	1-247-855-00	CARBON	10K 5% 1/6W
R327	1-247-828-00	CARBON	750 5% 1/6W	R378	1-247-835-00	CARBON	1.5K 5% 1/6W
R328	1-247-847-00	CARBON	4.7K 5% 1/6W	R379	1-247-855-00	CARBON	10K 5% 1/6W
R329	1-247-855-00	CARBON	10K 5% 1/6W	R380	1-247-819-00	CARBON	330 5% 1/6W
R330 Δ	1-212-360-00	METAL OXIDE	1 5% 1W F	R383	1-247-849-00	CARBON	5.6K 5% 1/6W
R331 Δ	1-212-849-00	FUSIBLE	4.7 5% 1/4W F	R384	1-247-857-00	CARBON	12K 5% 1/6W
R332	1-247-821-00	CARBON	390 5% 1/6W	R385	1-247-855-00	CARBON	10K 5% 1/6W
R333 Δ	1-212-855-00	FUSIBLE	8.2 5% 1/4W F	R386	1-247-839-00	CARBON	2.2K 5% 1/6W
R334	1-247-887-00	CARBON	220K 5% 1/6W	R389	1-247-847-00	CARBON	4.7K 5% 1/6W
R335	1-247-887-00	CARBON	220K 5% 1/6W	R390	1-247-859-00	CARBON	15K 5% 1/6W
R336	1-247-865-00	CARBON	27K 5% 1/6W	R391	1-247-855-00	CARBON	10K 5% 1/6W
R337	1-247-865-00	CARBON	27K 5% 1/6W	R392	1-247-871-00	CARBON	47K 5% 1/6W
R338	1-247-848-00	CARBON	5.1K 5% 1/6W	R393	1-247-867-00	CARBON	33K 5% 1/6W
R339	1-247-865-00	CARBON	27K 5% 1/6W	R394	1-247-879-00	CARBON	100K 5% 1/6W
R340	1-247-867-00	CARBON	33K 5% 1/6W	R395	1-247-879-00	CARBON	100K 5% 1/6W
R341	1-247-855-00	CARBON	10K 5% 1/6W	R396	1-247-887-00	CARBON	220K 5% 1/6W
R342	1-247-856-00	CARBON	11K 5% 1/6W	R397	1-247-867-00	CARBON	33K 5% 1/6W
R343	1-247-872-00	CARBON	51K 5% 1/6W	R398	1-247-883-00	CARBON	150K 5% 1/6W
R344	1-247-847-00	CARBON	4.7K 5% 1/6W	R399	1-247-883-00	CARBON	150K 5% 1/6W
R345	1-247-873-00	CARBON	56K 5% 1/6W	R400	1-247-857-00	CARBON	12K 5% 1/6W
R346	1-247-900-00	CARBON	750K 5% 1/6W	R401	1-247-879-00	CARBON	100K 5% 1/6W
R347	1-247-837-00	CARBON	1.8K 5% 1/6W	R402	1-247-879-00	CARBON	100K 5% 1/6W
R348	1-247-855-00	CARBON	10K 5% 1/6W	R403	1-247-883-00	CARBON	150K 5% 1/6W
R349	1-247-871-00	CARBON	47K 5% 1/6W	R404	1-247-855-00	CARBON	10K 5% 1/6W
R350	1-247-825-00	CARBON	560 5% 1/6W	R405	1-247-867-00	CARBON	33K 5% 1/6W
R351	1-247-842-00	CARBON	3K 5% 1/6W	R406	1-247-883-00	CARBON	150K 5% 1/6W
R352	1-247-843-00	CARBON	3.3K 5% 1/6W	R407	1-247-871-00	CARBON	47K 5% 1/6W
R353 Δ	1-212-850-00	FUSIBLE	5.1 5% 1/4W F	R408	1-247-867-00	CARBON	33K 5% 1/6W
R354 Δ	1-206-482-00	METAL OXIDE	62 5% 2W F	R409	1-247-897-00	CARBON	560K 5% 1/6W
R355 Δ	1-212-857-00	FUSIBLE	10 5% 1/4W F	R410	1-247-847-00	CARBON	4.7K 5% 1/6W
R356	1-247-859-00	CARBON	15K 5% 1/6W	R411	1-247-871-00	CARBON	47K 5% 1/6W
R357	1-247-823-00	CARBON	470 5% 1/6W	R412	1-247-897-00	CARBON	560K 5% 1/6W
R358	1-247-855-00	CARBON	10K 5% 1/6W	R413	1-247-867-00	CARBON	33K 5% 1/6W
R359	1-247-831-00	CARBON	1K 5% 1/6W	R414	1-247-868-00	CARBON	36K 5% 1/6W
R360	1-247-903-00	CARBON	1M 5% 1/6W	R415	1-247-832-00	CARBON	1.1K 5% 1/6W
R361	1-247-855-00	CARBON	10K 5% 1/6W	R416	1-247-857-00	CARBON	12K 5% 1/6W
R362	1-247-831-00	CARBON	1K 5% 1/6W	R417	1-247-866-00	CARBON	30K 5% 1/6W
R363	1-247-903-00	CARBON	1M 5% 1/6W	R418	1-247-871-00	CARBON	47K 5% 1/6W
R364	1-247-871-00	CARBON	47K 5% 1/6W	R419	1-247-855-00	CARBON	10K 5% 1/6W
R365	1-247-855-00	CARBON	10K 5% 1/6W	R420	1-247-871-00	CARBON	47K 5% 1/6W
R366	1-247-871-00	CARBON	47K 5% 1/6W	R421	1-247-871-00	CARBON	47K 5% 1/6W
R367	1-247-829-00	CARBON	820 5% 1/6W	R422	1-247-823-00	CARBON	470 5% 1/6W
R368	1-247-880-00	CARBON	110K 5% 1/6W	R423	1-247-847-00	CARBON	4.7K 5% 1/6W
R369	1-247-839-00	CARBON	2.2K 5% 1/6W	R424 Δ	1-212-360-00	METAL OXIDE	1 5% 1W F
R370	1-247-839-00	CARBON	2.2K 5% 1/6W	R426	1-247-871-00	CARBON	47K 5% 1/6W
R373	1-247-891-00	CARBON	330K 5% 1/6W	R427	1-247-855-00	CARBON	10K 5% 1/6W
R374	1-247-891-00	CARBON	330K 5% 1/6W	R428	1-247-879-00	CARBON	100K 5% 1/6W
R375	1-247-863-00	CARBON	22K 5% 1/6W	R429	1-247-871-00	CARBON	47K 5% 1/6W

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R430	1-247-859-00	CARBON	15K 5% 1/6W	R638	1-247-855-00	CARBON	10K 5% 1/6W
R431	1-247-871-00	CARBON	47K 5% 1/6W	R639	1-247-855-00	CARBON	10K 5% 1/6W
R432	1-247-859-00	CARBON	15K 5% 1/6W	R640	1-247-855-00	CARBON	10K 5% 1/6W
R433	1-247-871-00	CARBON	47K 5% 1/6W	R641	1-247-855-00	CARBON	10K 5% 1/6W
R434	1-247-855-00	CARBON	10K 5% 1/6W	R642	1-247-855-00	CARBON	10K 5% 1/6W
R435	1-247-871-00	CARBON	47K 5% 1/6W	R643	1-247-829-00	CARBON	820 5% 1/6W
R436	1-247-831-00	CARBON	1K 5% 1/6W	R644	1-247-829-00	CARBON	820 5% 1/6W
R437	1-247-831-00	CARBON	1K 5% 1/6W	R645	1-247-829-00	CARBON	820 5% 1/6W
R438	1-247-831-00	CARBON	1K 5% 1/6W	R646	1-247-829-00	CARBON	820 5% 1/6W
R441	1-247-859-00	CARBON	15K 5% 1/6W	R647	1-247-829-00	CARBON	820 5% 1/6W
R442	1-247-855-00	CARBON	10K 5% 1/6W	R648	1-247-829-00	CARBON	820 5% 1/6W
R443	1-247-825-00	CARBON	560 5% 1/6W	R649	1-247-829-00	CARBON	820 5% 1/6W
R444	1-247-871-00	CARBON	47K 5% 1/6W	R650	1-247-853-00	CARBON	8.2K 5% 1/6W
R445	1-247-855-00	CARBON	10K 5% 1/6W	R651	1-247-871-00	CARBON	47K 5% 1/6W
R446	1-247-847-00	CARBON	4.7K 5% 1/6W	R652	1-247-847-00	CARBON	4.7K 5% 1/6W
R447	1-247-839-00	CARBON	2.2K 5% 1/6W	R653	1-247-831-00	CARBON	1K 5% 1/6W
R448	1-247-855-00	CARBON	10K 5% 1/6W	R654	1-247-831-00	CARBON	1K 5% 1/6W
R449	1-247-855-00	CARBON	10K 5% 1/6W	R655	1-247-831-00	CARBON	1K 5% 1/6W
R601	1-247-831-00	CARBON	1K 5% 1/6W	R656	1-247-871-00	CARBON	47K 5% 1/6W
R602	1-247-871-00	CARBON	47K 5% 1/6W	R657	1-247-869-00	CARBON	39K 5% 1/6W
R603	1-247-869-00	CARBON	39K 5% 1/6W	R658	1-247-839-00	CARBON	2.2K 5% 1/6W
R604	1-247-862-00	CARBON	20K 5% 1/6W	R901	1-247-871-00	CARBON	47K 5% 1/6W
R605	1-247-862-00	CARBON	20K 5% 1/6W	R902	1-247-863-00	CARBON	22K 5% 1/6W
R606	1-247-873-00	CARBON	56K 5% 1/6W	R903	1-247-841-00	CARBON	2.7K 5% 1/6W
R607	1-247-869-00	CARBON	39K 5% 1/6W				
R608	1-247-829-00	CARBON	820 5% 1/6W				
R609	1-247-829-00	CARBON	820 5% 1/6W				
R610	1-247-869-00	CARBON	39K 5% 1/6W				
R611	1-247-829-00	CARBON	820 5% 1/6W				
R612	1-247-829-00	CARBON	820 5% 1/6W				
R613	1-247-869-00	CARBON	39K 5% 1/6W				
R614	1-247-869-00	CARBON	39K 5% 1/6W				
R615	1-247-827-00	CARBON	680 5% 1/6W				
R616	1-247-853-00	CARBON	8.2K 5% 1/6W				
R617	1-247-855-00	CARBON	10K 5% 1/6W				
R618	1-247-853-00	CARBON	8.2K 5% 1/6W				
R619	1-247-853-00	CARBON	8.2K 5% 1/6W				
R620	1-247-853-00	CARBON	8.2K 5% 1/6W				
R621	1-247-853-00	CARBON	8.2K 5% 1/6W				
R622	1-247-849-00	CARBON	5.6K 5% 1/6W				
R623	1-247-855-00	CARBON	10K 5% 1/6W				
R624	1-247-842-00	CARBON	3K 5% 1/6W				
R625	1-247-807-00	CARBON	100 5% 1/6W				
R626	1-247-873-00	CARBON	56K 5% 1/6W				
R627	1-247-863-00	CARBON	22K 5% 1/6W				
R628	1-247-809-00	CARBON	120 5% 1/6W				
R629	1-247-830-00	CARBON	910 5% 1/6W				
R630	1-247-863-00	CARBON	22K 5% 1/6W				
R631	1-247-855-00	CARBON	10K 5% 1/6W				
R632	1-247-839-00	CARBON	2.2K 5% 1/6W				
R633	1-247-839-00	CARBON	2.2K 5% 1/6W				
R634	1-247-839-00	CARBON	2.2K 5% 1/6W				
R635	1-247-839-00	CARBON	2.2K 5% 1/6W				
R636	1-247-839-00	CARBON	2.2K 5% 1/6W				
R637	1-247-839-00	CARBON	2.2K 5% 1/6W				

VARIABLE RESISTOR

RV001	1-228-991-00	RES, ADJ, METAL GLAZE	2.2K
RV301	1-224-254-XX	RES, ADJ, METAL GLAZE	47K
RV302	1-228-750-00	RES, ADJ, CARBON	47K
RV303	1-228-750-00	RES, ADJ, CARBON	47K
RV304	1-228-991-00	RES, ADJ, METAL GLAZE	2.2K
RV305	1-228-750-00	RES, ADJ, CARBON	47K
RV306	1-228-994-00	RES, ADJ, METAL GLAZE	10K
RV307	1-228-994-00	RES, ADJ, METAL GLAZE	10K

THERMISTOR

TH002	1-800-202-XX	THERMISTOR S-10K
TH301	1-800-198-XX	THERMISTOR S-1K
TH302	1-800-200-00	THERMISTOR S-3K

When indicating parts by reference number, please include the board name.

FU-22**MT-4****TU-60**

Ref.No	Part No.	Description	Remark
	▲:1-612-323-12	FU-22 BOARD *****	
	▲:3-674-372-00	HOLDER (A), LED	
	▲:3-684-040-01	HOLDER (T), LED	
	▲:3-684-058-01	SPACER, LED	
	<u>CONNECTOR</u>		
CN301	▲:1-564-019-11	PIN, CONNECTOR 9P	
CN302	▲:1-564-017-00	PIN, CONNECTOR 7P	
	<u>DIODE</u>		
D301	8-719-812-31	DIODE TLR123	
D302	8-719-812-30	DIODE TLO123	
D303	8-719-812-32	DIODE TLY123	
D304	8-719-812-32	DIODE TLY123	
D305	8-719-812-33	DIODE TLG123A	
D306	8-719-812-30	DIODE TLO123	
D307	8-719-812-33	DIODE TLG123A	
D308	8-719-906-49	DIODE LT-9230N	
D309	8-719-812-33	DIODE TLG123A	
	<u>RESISTOR</u>		
R301	1-247-811-00	CARBON 150 5% 1/6W	
R302	1-247-817-00	CARBON 270 5% 1/6W	
R303	1-247-811-00	CARBON 150 5% 1/6W	
R304	1-247-807-00	CARBON 100 5% 1/6W	
R305	1-247-811-00	CARBON 150 5% 1/6W	
R306	1-247-811-00	CARBON 150 5% 1/6W	
R307	1-247-811-00	CARBON 150 5% 1/6W	
R308	1-247-811-00	CARBON 150 5% 1/6W	
R309	1-247-815-00	CARBON 220 5% 1/6W	
	<u>VARIABLE RESISTOR</u>		
RV301	1-228-988-00	RES, VAR, CARBON 10K/10K	
	<u>SWITCH</u>		
S301	1-553-997-00	SWITCH, KEY BOARD	
S302	1-553-997-00	SWITCH, KEY BOARD	
S303	1-553-997-00	SWITCH, KEY BOARD	
S304	1-553-997-00	SWITCH, KEY BOARD	
S305	1-553-997-00	SWITCH, KEY BOARD	
S306	1-553-997-00	SWITCH, KEY BOARD	
S307	1-553-997-00	SWITCH, KEY BOARD	
S308	1-553-997-00	SWITCH, KEY BOARD	

	▲:1-610-400-00	MT-4 BOARD *****	
	▲:1-463-350-12	TUNER (BT-881)	

Ref.No	Part No.	Description	Remark
	▲:A-6721-201-A	TU-60 BOARD, COMPLETE *****	
	▲:3-662-227-00	HOLDER (R-3), LED	
	▲:3-674-390-00	HOLDER (B), LED	
	▲:3-681-220-00	BAND, RETAINER, TUNER	
	▲:3-681-233-00	CASE, SHIELD (MAIN), TU	
	▲:3-684-073-01	LID, UPPER, TU SHIELD CASE (S)	
	▲:3-684-074-01	LID, BOTTOM, TU SHIELD CASE (S)	
C001	1-102-529-00	CERAMIC 100PF 5% 50V	
C002	1-102-527-00	CERAMIC 82PF 5% 50V	
C003	1-102-949-00	CERAMIC 12PF 5% 50V	
C004	1-102-523-00	CERAMIC 56PF 5% 50V	
C005	1-161-030-00	CERAMIC 0.0047MF 20% 25V	
C006	1-161-030-00	CERAMIC 0.0047MF 20% 25V	
C007	1-161-030-00	CERAMIC 0.0047MF 20% 25V	
C008	1-161-030-00	CERAMIC 0.0047MF 20% 25V	
C009	1-123-380-00	ELECT 1MF 20% 50V	
C010	1-123-356-00	ELECT 10MF 20% 16V	
C011	1-161-030-00	CERAMIC 0.0047MF 20% 25V	
C012	1-161-030-00	CERAMIC 0.0047MF 20% 25V	
C013	1-161-059-00	CERAMIC 0.047MF 20% 25V	
C014	1-102-529-00	CERAMIC 100PF 5% 50V	
C015	1-123-332-00	ELECT 47MF 20% 16V	
C016	1-101-004-00	CERAMIC 0.01MF 50V	
C017	1-102-979-00	CERAMIC 240PF 5% 50V	
C018	1-161-055-00	CERAMIC 0.022MF 20% 25V	
C019	1-123-380-00	ELECT 1MF 20% 50V	
C020	1-161-030-00	CERAMIC 0.0047MF 20% 25V	
C021	1-123-286-00	ELECT 0.33MF 20% 50V	
C022	1-161-032-00	CERAMIC 0.01MF 20% 25V	
C023	1-101-361-00	CERAMIC 150PF 10% 50V	
C024	1-123-380-00	ELECT 1MF 20% 50V	
C025	1-104-077-00	POLYSTYRENE 0.001MF 5% 50V	
C026	1-161-055-00	CERAMIC 0.022MF 20% 25V	
C027	1-161-055-00	CERAMIC 0.022MF 20% 25V	
C028	1-161-055-00	CERAMIC 0.022MF 20% 25V	
C029	1-130-478-00	MYLAR 0.0039MF 5% 50V	
C030	1-130-478-00	MYLAR 0.0039MF 5% 50V	
C031	1-130-478-00	MYLAR 0.0039MF 5% 50V	
C032	1-123-380-00	ELECT 1MF 20% 50V	
C033	1-123-330-00	ELECT 22MF 20% 16V	
C034	1-123-380-00	ELECT 1MF 20% 50V	
C036	1-123-332-00	ELECT 47MF 20% 16V	
C037	1-123-356-00	ELECT 10MF 20% 16V	
C038	1-123-356-00	ELECT 10MF 20% 16V	
C039	1-161-059-00	CERAMIC 0.047MF 20% 25V	
C040	1-104-089-00	POLYSTYRENE 0.0033MF 5% 50V	
C041	1-104-077-00	POLYSTYRENE 0.001MF 5% 50V	
C042	1-161-059-00	CERAMIC 0.047MF 20% 25V	
C043	1-161-055-00	CERAMIC 0.022MF 20% 25V	
C044	1-136-244-11	FILM 0.1MF 2% 50V	

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C045	1-136-244-11	FILM 0.1MF	2% 50V	D104	8-719-812-31	DIODE TLR123	
C046	1-123-308-00	ELECT 220MF	20% 10V	D105	8-719-812-31	DIODE TLR123	
C047	1-136-243-11	FILM 0.047MF	2% 50V	D106	8-719-812-32	DIODE TLY123	
C048	1-136-243-11	FILM 0.047MF	2% 50V	D107	8-719-812-33	DIODE TLG123A	
C101	1-102-963-00	CERAMIC 33PF	10% 50V	D201	8-719-000-12	DIODE MC931	
C102	1-102-963-00	CERAMIC 33PF	10% 50V	<u>IC</u>			
C103	1-123-381-00	ELECT 2.2MF	20% 50V	IC001	8-759-909-08	IC TDA3541	
C104	1-161-059-00	CERAMIC 0.047MF	20% 25V	IC002	8-759-909-54	IC TDA2546A	
C105	1-161-271-00	CERAMIC 100PF	5% 50V	IC003	6-066-721-70	IC TDA3800GS	
C106	1-130-495-00	MYLAR 0.1MF	5% 50V	IC004	8-759-145-58	IC UPC4558C	
C107	1-130-493-00	MYLAR 0.068MF	5% 50V	IC101	8-759-602-05	IC M50160-019SP	
C108	1-130-493-00	MYLAR 0.068MF	5% 50V	IC102	8-759-600-66	IC M58653P	
C109	1-102-963-00	CERAMIC 33PF	10% 50V	IC103	8-759-600-15	IC M54570L	
C110	1-123-356-00	ELECT 10MF	20% 16V	IC201	8-759-157-40	IC UPC574J	
C111	1-101-004-00	CERAMIC 0.01MF	50V	<u>COIL</u>			
C112	1-123-356-00	ELECT 10MF	20% 16V	L001	1-408-592-00	MICRO INDUCTOR 1.2UH	
C201	1-101-004-00	CERAMIC 0.01MF	50V	L002	1-408-591-00	MICRO INDUCTOR 1UH	
C202	1-123-332-00	ELECT 47MF	20% 16V	L003	1-408-591-00	MICRO INDUCTOR 1UH	
C203	1-123-332-00	ELECT 47MF	20% 16V	L004	1-408-600-00	MICRO INDUCTOR 5.6UH	
C204	1-101-004-00	CERAMIC 0.01MF	50V	L005	1-408-599-00	MICRO INDUCTOR 4.7UH	
C205	1-123-356-00	ELECT 10MF	20% 16V	L006	1-408-597-00	MICRO INDUCTOR 3.3UH	
C206	1-123-380-00	ELECT 1MF	20% 50V	L007	1-408-591-00	MICRO INDUCTOR 1UH	
C207	1-123-356-00	ELECT 10MF	20% 16V	L008	1-408-591-00	MICRO INDUCTOR 1UH	
C208	1-101-004-00	CERAMIC 0.01MF	50V	<u>TRANSISTOR</u>			
C209	1-101-004-00	CERAMIC 0.01MF	50V	Q001	=>8-729-203-28	TRANSISTOR 2SC2216	
C221	1-123-330-00	ELECT 22MF	20% 16V	Q002	=>8-729-245-83	TRANSISTOR 2SC2458	
C405	1-101-880-00	CERAMIC 47PF	5% 50V	Q003	8-729-900-74	TRANSISTOR DTC143TS	
<u>FILTER</u>				Q004	8-729-900-74	TRANSISTOR DTC143TS	
CF001	1-527-840-00	FILTER, CERAMIC		Q101	=>8-729-245-83	TRANSISTOR 2SC2458	
CF002	1-527-839-00	FILTER, CERAMIC		Q102	=>8-729-245-83	TRANSISTOR 2SC2458	
CF101	1-527-822-00	OSCILLATOR, CERAMIC		Q103	8-729-900-89	TRANSISTOR DTC144ES	
<u>CONNECTOR</u>				Q201	8-729-900-89	TRANSISTOR DTC144ES	
CN001	1-560-893-00	PIN, CONNECTOR 5P		Q202	8-729-103-43	TRANSISTOR 2SB734	
CN002	1-560-892-00	PIN, CONNECTOR 4P		Q203	8-729-900-89	TRANSISTOR DTC144ES	
CN003	1-560-892-00	PIN, CONNECTOR 4P		Q404	8-729-900-80	TRANSISTOR DTC114ES	
CN101	1-560-900-00	PIN, CONNECTOR 12P		<u>RESISTOR</u>			
CN102	1-560-892-00	PIN, CONNECTOR 4P		R001	1-247-819-00	CARBON 330 5% 1/6W	
CN201	1-560-892-00	PIN, CONNECTOR 4P		R002	1-247-847-00	CARBON 4.7K 5% 1/6W	
<u>TRIMMER</u>				R003	1-247-839-00	CARBON 2.2K 5% 1/6W	
CT001	1-404-134-00	TRAP, CERAMIC (5.5MHZ)		R004	1-247-815-00	CARBON 220 5% 1/6W	
<u>DIODE</u>				R005	1-247-813-00	CARBON 180 5% 1/6W	
D001	8-719-911-19	DIODE 1SS119		R006	1-247-869-00	CARBON 39K 5% 1/6W	
D102	8-719-911-19	DIODE 1SS119					
D103	8-719-812-31	DIODE TLR123					

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R009	1-247-843-00	CARBON	3.3K	5%	1/6W	
R010	1-247-853-00	CARBON	8.2K	5%	1/6W	
R011	1-247-879-00	CARBON	100K	5%	1/6W	
R012	1-247-871-00	CARBON	47K	5%	1/6W	
R013	1-247-871-00	CARBON	47K	5%	1/6W	
R014	1-247-831-00	CARBON	1K	5%	1/6W	
R015	1-247-813-00	CARBON	180	5%	1/6W	
R016	1-247-824-00	CARBON	510	5%	1/6W	
R017	1-247-821-00	CARBON	390	5%	1/6W	
R018	1-247-823-00	CARBON	470	5%	1/6W	
R019	1-247-835-00	CARBON	1.5K	5%	1/6W	
R020	1-247-829-00	CARBON	820	5%	1/6W	
R021	1-247-829-00	CARBON	820	5%	1/6W	
R022	1-247-829-00	CARBON	820	5%	1/6W	
R023	1-247-847-00	CARBON	4.7K	5%	1/6W	
R024	1-247-853-00	CARBON	8.2K	5%	1/6W	
R025	1-247-841-00	CARBON	2.7K	5%	1/6W	
R026	1-247-841-00	CARBON	2.7K	5%	1/6W	
R027	1-247-853-00	CARBON	8.2K	5%	1/6W	
R030	1-247-861-00	CARBON	18K	5%	1/6W	
R031	1-247-865-00	CARBON	27K	5%	1/6W	
R032	1-247-829-00	CARBON	820	5%	1/6W	
R033	1-215-461-00	METAL	47K	1%	1/6W	
R034	1-215-409-00	METAL	330	1%	1/6W	
R035	1-215-487-00	METAL	560K	1%	1/6W	
R036	1-247-831-00	CARBON	1K	5%	1/6W	
R037	1-215-460-00	METAL	43K	1%	1/6W	
R038	1-215-408-00	METAL	300	1%	1/6W	
R039	1-215-486-00	METAL	510K	1%	1/6W	
R040	1-247-831-00	CARBON	1K	5%	1/6W	
R041	1-247-147-00	CARBON	4.7K	5%	1/4W	
R042	1-247-841-00	CARBON	2.7K	5%	1/6W	
R101	1-247-163-00	CARBON	22K	5%	1/4W	
R102	1-247-163-00	CARBON	22K	5%	1/4W	
R103	1-247-163-00	CARBON	22K	5%	1/4W	
R104	1-247-155-00	CARBON	10K	5%	1/4W	
R105	1-247-155-00	CARBON	10K	5%	1/4W	
R106	1-247-155-00	CARBON	10K	5%	1/4W	
R107	1-247-155-00	CARBON	10K	5%	1/4W	
R108	1-247-155-00	CARBON	10K	5%	1/4W	
R109	1-247-155-00	CARBON	10K	5%	1/4W	
R111	1-247-130-00	CARBON	910	5%	1/4W	
R112	1-247-130-00	CARBON	910	5%	1/4W	
R113	1-247-163-00	CARBON	22K	5%	1/4W	
R114	1-247-163-00	CARBON	22K	5%	1/4W	
R115	1-247-163-00	CARBON	22K	5%	1/4W	
R116	1-247-163-00	CARBON	22K	5%	1/4W	
R117	1-247-163-00	CARBON	22K	5%	1/4W	
R118	1-247-891-00	CARBON	330K	5%	1/6W	
R119	1-247-839-00	CARBON	2.2K	5%	1/6W	
R120	1-247-155-00	CARBON	10K	5%	1/4W	
R121	1-247-839-00	CARBON	2.2K	5%	1/6W	
R122	1-247-135-00	CARBON	1.5K	5%	1/4W	
R123	1-247-133-00	CARBON	1.2K	5%	1/4W	

Ref.No	Part No.	Description				Remark
R124	1-247-179-00	CARBON	100K	5%	1/4W	
R125	1-247-163-00	CARBON	22K	5%	1/4W	
R128	1-247-853-00	CARBON	8.2K	5%	1/6W	
R201	1-247-167-00	CARBON	33K	5%	1/4W	
R202	1-247-863-00	CARBON	22K	5%	1/6W	
R203	1-247-847-00	CARBON	4.7K	5%	1/6W	
R204	1-247-831-00	CARBON	1K	5%	1/6W	
R206	1-247-843-00	CARBON	3.3K	5%	1/6W	
R207	1-247-851-00	CARBON	6.8K	5%	1/6W	
R208	1-206-670-00	METAL OXIDE	1.8K	5%	2W	F
R209	1-247-167-00	CARBON	33K	5%	1/4W	
R210	1-247-163-00	CARBON	22K	5%	1/4W	
R221	1-247-839-00	CARBON	2.2K	5%	1/6W	
R222	1-247-863-00	CARBON	22K	5%	1/6W	
R223	1-247-871-00	CARBON	47K	5%	1/6W	
R224	1-247-891-00	CARBON	330K	5%	1/6W	
VARIABLE RESISTOR						
RV001	1-228-750-00	RES, ADJ, CARBON	47K			
RV002	1-228-995-00	RES, ADJ, METAL GLAZE	22K			
SWITCH						
S101	1-553-997-00	SWITCH, KEY BOARD				
S102	1-553-997-00	SWITCH, KEY BOARD				
S103	1-553-997-00	SWITCH, KEY BOARD				
S104	1-553-997-00	SWITCH, KEY BOARD				
S105	1-553-997-00	SWITCH, KEY BOARD				
S106	1-553-997-00	SWITCH, KEY BOARD				
S107	1-553-997-00	SWITCH, KEY BOARD				
S201	1-516-226-00	SLIDE SWITCH				
FILTER						
SWF001	1-404-438-00	FILTER, SAW				
TRANSFORMER						
T002	1-404-068-00	COIL, VIF				
T003	1-404-068-00	COIL, VIF				
T004	1-404-378-00	I.F.T				
T005	1-404-378-00	I.F.T				
T006	1-404-135-00	COIL, SIF DISCRI				
T007	1-404-378-00	I.F.T				
T008	1-404-135-00	COIL, SIF DISCRI				
T009	1-404-343-00	COIL, IF				

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

TR-14	CS-3	CS-4	RD-6	RD-7	HP-7	RL-18	TM-54
-------	------	------	------	------	------	-------	-------

Ref.No	Part No.	Description	Remark
	♣:1-612-327-11	TR-14 BOARD *****	
		<u>VARIABLE RESISTOR</u>	
RV701	1-228-603-00	RES, VAR, CARBON 100K	

	♣:1-609-227-11	CS-3 BOARD *****	
		<u>CONNECTOR</u>	
CN301	♣:1-564-029-00	PIN, CONNECTOR 4P	
		<u>SWITCH</u>	
S301	1-554-241-00	SWITCH, LEVER	

	♣:1-609-228-11	CS-4 BOARD *****	
		<u>SWITCH</u>	
S302	1-554-241-00	SWITCH, LEVER	

	♣:1-610-401-00	RD-6 BOARD *****	
	♣:3-681-157-00	HOLDER, RD	
		<u>DIODE</u>	
D001	=>8-719-921-03	DIODE GP-2S02B	

	♣:1-610-402-00	RD-7 BOARD *****	
		<u>DIODE</u>	
D001	=>8-719-921-03	DIODE GP-2S02B	

	♣:1-612-324-11	HP-7 BOARD *****	
		<u>JACK</u>	
JK401	1-507-833-00	JACK	

Ref.No	Part No.	Description	Remark
	♣:1-612-330-12	RL-18 BOARD *****	
		<u>CAPACITOR</u>	
C801	1-123-356-00	ELECT 10MF	20% 16V
C802	1-123-356-00	ELECT 10MF	20% 16V
C803	1-161-039-00	CERAMIC 0.001MF	10% 25V
C804	1-161-039-00	CERAMIC 0.001MF	10% 25V
C805	1-123-356-00	ELECT 10MF	20% 16V
		<u>CONNECTOR</u>	
CN801	♣:1-564-017-00	PIN, CONNECTOR 7P	
CN802	♣:1-564-022-00	PIN, CONNECTOR 12P	
CN803	♣:1-564-017-00	PIN, CONNECTOR 7P	
		<u>DIODE</u>	
D801	8-719-911-19	DIODE 1SS119	
D802	8-719-911-19	DIODE 1SS119	
		<u>IC</u>	
IC801	8-759-135-80	IC UPC358C	
		<u>RESISTOR</u>	
R801	1-247-855-00	CARBON 10K 5%	1/6W
R802	1-247-855-00	CARBON 10K 5%	1/6W
R803	1-247-852-00	CARBON 7.5K 5%	1/6W
R804	1-247-852-00	CARBON 7.5K 5%	1/6W
R805	1-247-878-00	CARBON 91K 5%	1/6W
R806	1-247-878-00	CARBON 91K 5%	1/6W
R807	1-247-861-00	CARBON 18K 5%	1/6W
R808	1-247-861-00	CARBON 18K 5%	1/6W
R809	1-247-220-00	CARBON 150 5%	1/2W
R810	1-247-879-00	CARBON 100K 5%	1/6W
R811	1-247-791-00	CARBON 22 5%	1/6W
R812	1-247-879-00	CARBON 100K 5%	1/6W
R813	1-247-791-00	CARBON 22 5%	1/6W

	♣:A-6728-995-A	TM-54 BOARD, COMPLETE *****	
		<u>CAPACITOR</u>	
C101	1-123-382-00	ELECT 3.3MF	20% 50V
C102	1-161-025-00	CERAMIC 0.1MF	10% 25V
C103	1-161-061-00	CERAMIC 0.068MF	10% 50V
C104	1-161-025-00	CERAMIC 0.1MF	10% 25V
C105	1-125-299-00	***** 47000MF	5.5V
C106	1-123-357-00	ELECT 22MF	20% 50V
C107	1-102-959-00	CERAMIC 22PF	5% 50V
C108	1-123-318-00	ELECT 33MF	20% 16V
C109	1-161-024-00	CERAMIC 0.082MF	10% 25V
		<u>CONNECTOR</u>	
CN102	♣:1-564-002-00	PIN, CONNECTOR 3P	
CN104	♣:1-564-006-11	PIN, CONNECTOR 7P	
CN106	♣:1-564-027-00	PIN, CONNECTOR 2P	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
<u>TRIMMER</u>			
CT101	1-141-022-21	CAP, TRIMMER, CERAMIC	20PF
<u>DIODE</u>			
D101	8-719-812-31	DIODE TLR123	
D102	8-719-911-19	DIODE 1SS119	
D103	8-719-911-19	DIODE 1SS119	
D104	8-719-191-07	DIODE RD9.1E-B	
D105	8-719-911-19	DIODE 1SS119	
D106	8-719-911-19	DIODE 1SS119	
D107	8-719-911-19	DIODE 1SS119	
<u>IC</u>			
IC101	8-759-103-16	IC UPD7519G-132	
<u>TRANSISTOR</u>			
Q101 =>	8-729-245-83	TRANSISTOR 2SC2458	
Q102 =>	8-729-245-83	TRANSISTOR 2SC2458	
Q103 =>	8-729-204-83	TRANSISTOR 2SA1048-GR	
Q104 =>	8-729-245-83	TRANSISTOR 2SC2458	
<u>RESISTOR</u>			
R101	1-247-875-00	CARBON	68K 5% 1/6W
R102	1-247-879-00	CARBON	100K 5% 1/6W
R103	1-247-855-00	CARBON	10K 5% 1/6W
R104	1-247-855-00	CARBON	10K 5% 1/6W
R105	1-247-855-00	CARBON	10K 5% 1/6W
R106	1-247-855-00	CARBON	10K 5% 1/6W
R107	1-247-855-00	CARBON	10K 5% 1/6W
R108	1-247-855-00	CARBON	10K 5% 1/6W
R109	1-247-855-00	CARBON	10K 5% 1/6W
R110	1-247-855-00	CARBON	10K 5% 1/6W
R111	1-247-855-00	CARBON	10K 5% 1/6W
R112	1-247-867-00	CARBON	33K 5% 1/6W
R113	1-247-872-00	CARBON	51K 5% 1/6W
R114	1-247-886-00	CARBON	200K 5% 1/6W
R115	1-247-903-00	CARBON	1M 5% 1/6W
R116	1-247-868-00	CARBON	36K 5% 1/6W
R117	1-247-874-00	CARBON	62K 5% 1/6W
R118	1-247-869-00	CARBON	39K 5% 1/6W
R119	1-247-879-00	CARBON	100K 5% 1/6W
R120	1-247-855-00	CARBON	10K 5% 1/6W
R121	1-247-867-00	CARBON	33K 5% 1/6W
R122	1-247-863-00	CARBON	22K 5% 1/6W
R123	1-247-831-00	CARBON	1K 5% 1/6W
R124	1-247-843-00	CARBON	3.3K 5% 1/6W
R125	1-247-879-00	CARBON	100K 5% 1/6W
R126	1-247-879-00	CARBON	100K 5% 1/6W
R127	1-247-879-00	CARBON	100K 5% 1/6W
R128	1-247-879-00	CARBON	100K 5% 1/6W
R129	1-247-804-00	CARBON	75 5% 1/6W

Ref.No	Part No.	Description	Remark
<u>CRYSTAL</u>			
X101	1-527-647-00	OSCILLATOR, CRYSTAL	

♣:A-6728-996-A TM-55 BOARD, COMPLETE			

♣:3-684-005-01 HOLDER (S), LED			
♣:3-684-030-01 HOLDER, INDICATION TUBE			
7-685-134-14 SCREW +P 2.6X8 TYPE2 NON-SLIT			
<u>DIODE</u>			
D201	8-719-812-31	DIODE TLR123	
D202	8-719-812-31	DIODE TLR123	
D203	8-719-812-31	DIODE TLR123	
D204	8-719-812-31	DIODE TLR123	
<u>INDICATOR TUBE</u>			
FL201	1-519-315-11	INDICATOR TUBE, FLUORESCENT	
<u>RESISTOR</u>			
R201	1-247-815-00	CARBON	220 5% 1/6W
R202	1-247-815-00	CARBON	220 5% 1/6W
<u>SWITCH</u>			
S201	1-553-997-00	SWITCH, KEY BOARD	
S202	1-553-997-00	SWITCH, KEY BOARD	
S203	1-553-997-00	SWITCH, KEY BOARD	
S204	1-553-997-00	SWITCH, KEY BOARD	
S205	1-553-997-00	SWITCH, KEY BOARD	
S206	1-553-997-00	SWITCH, KEY BOARD	
S207	1-553-997-00	SWITCH, KEY BOARD	
S208	1-553-997-00	SWITCH, KEY BOARD	
S209	1-553-997-00	SWITCH, KEY BOARD	
S210	1-553-997-00	SWITCH, KEY BOARD	
S211	1-553-997-00	SWITCH, KEY BOARD	
S212	1-553-997-00	SWITCH, KEY BOARD	
S213	1-553-997-00	SWITCH, KEY BOARD	
S214	1-553-997-00	SWITCH, KEY BOARD	
S215	1-554-375-00	SWITCH, PUSH	

♣:1-612-325-11 SV-12 BOARD			

<u>SLIDE RES VAR</u>			
RV501	1-230-414-11	RES, VAR, SLIDE 20K/20K	

When indicating parts by reference number, please include the board name.

SW-31

N

LM-8

DM-10

Ref.No	Part No.	Description	Remark
	♣:1-612-326-12	SW-31 BOARD *****	
		<u>DIODE</u>	
D601	8-719-911-19	DIODE 1SS119	
		<u>RESISTOR</u>	
R601	1-247-807-00	CARBON 100 5% 1/6W	
		<u>SWITCH</u>	
S601	1-553-754-00	SWITCH, SLIDE	
S602	1-553-716-00	SWITCH, SLIDE	
S603	1-553-716-00	SWITCH, SLIDE	
S604	1-553-716-00	SWITCH, SLIDE	
S605	1-553-716-00	SWITCH, SLIDE	
S606	1-553-716-00	SWITCH, SLIDE	

	♣:1-606-794-00	N BOARD *****	
		<u>CAPACITOR</u>	
C001	1-123-617-00	ELECT 10MF 20% 16V	
C002	1-123-617-00	ELECT 10MF 20% 16V	
C003	1-123-617-00	ELECT 10MF 20% 16V	
C004	1-161-057-00	CERAMIC 0.033MF 10% 25V	
C005	1-106-184-00	MYLAR 0.0033MF 5% 50V	
C006	1-123-821-00	ELECT 47MF 20% 16V	
		<u>DIODE</u>	
D001	8-719-110-32	DIODE PH302B	
		<u>IC</u>	
IC001	=>8-759-102-84	IC UPC1373HA	
		<u>COIL</u>	
L001	1-404-310-00	COIL	

	♣:1-605-071-00	LM-8 BOARD *****	
		<u>CAPACITOR</u>	
C101	1-161-057-00	CERAMIC 0.033MF 10% 50V	
C102	1-161-057-00	CERAMIC 0.033MF 10% 50V	

Ref.No.	Part No.	Description	Remark
		<u>COIL</u>	
L101	1-408-120-00	MICRO INDUCTOR 18UH	
L102	1-408-120-00	MICRO INDUCTOR 18UH	
		<u>RESISTOR</u>	
R101	♣:1-206-640-00	METAL OXIDE 100 5% 2W F	

	♣:1-612-960-12	DM-10 BOARD *****	
		<u>CAPACITOR</u>	
C301	1-108-583-00	MYLAR 0.015MF 5% 50V	
C302	1-108-563-00	MYLAR 0.0022MF 5% 50V	
C303	1-108-602-00	MYLAR 0.091MF 5% 50V	
C304	1-101-005-00	CERAMIC 0.022MF 50V	
C305	1-108-583-00	MYLAR 0.015MF 5% 50V	
C306	1-108-563-00	MYLAR 0.0022MF 5% 50V	
C307	1-108-602-00	MYLAR 0.091MF 5% 50V	
C308	1-101-005-00	CERAMIC 0.022MF 50V	
		<u>COIL</u>	
L301	1-407-177-XX	MICRO INDUCTOR 470UH	
L302	1-407-177-XX	MICRO INDUCTOR 470UH	
		<u>TRANSISTOR</u>	
Q301	8-729-178-54	TRANSISTOR 2SC2785	
Q302	8-729-178-54	TRANSISTOR 2SC2785	
		<u>RESISTOR</u>	
R301	1-247-824-00	CARBON 510 5% 1/6W	
R302	1-247-835-00	CARBON 1.5K 5% 1/6W	
R303	1-247-843-00	CARBON 3.3K 5% 1/6W	
R304	1-247-848-00	CARBON 5.1K 5% 1/6W	
R305	1-247-824-00	CARBON 510 5% 1/6W	
R306	1-247-835-00	CARBON 1.5K 5% 1/6W	
R307	1-247-843-00	CARBON 3.3K 5% 1/6W	
R308	1-247-848-00	CARBON 5.1K 5% 1/6W	

The components identified by shading and mark ♣ are critical for safety. Replace only with part number specified.

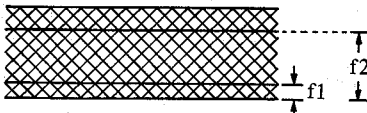
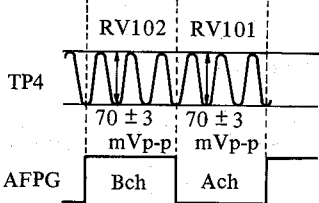
When indicating parts by reference number, please include the board name.

AF-3 Board Adjustment after replacement

This adjustment should be performed when the AF-3 board whose end of part No. is -13 has been replaced with the board whose end of part No. is -14 or -15.

Adjustment Method on AF-3 Board Replacement

Note: • Set the LPF switch to OFF. • Set the BETA Hi-Fi switch to AUTO. • () is Rch.

Adjustment Method	Mode	Input Signal	Output Signal	Equipment Required	Standard	Adjustment Point
1. E-E Input Level Adjustment	REC	- Set the REC level control volume to the center click position. - Input a -10dBs, 400Hz signal to the AUDIO IN.	TP006 (TP007) on AF-3 board	Audio Level Meter	$-26.5 \pm 0.1\text{dB}$	AF-3 Board RV022 (RV023)
2. Level Meter Adjustment	REC	- Set the REC level control volume to the center click position. - Input a -10dBs, 400Hz signal to the AUDIO IN.	- Connect a digital voltmeter to pin ④ (pin ⑤) of level meter. - Adjust the voltage with RV020 (RV021) on AF-3 board. - Confirm that the LEDs from first to seventh light up. - Confirm that the LEDs light up and go off correctly when the level display sw is turned on and off.	Digital Voltmeter	$1.75 \pm 0.05\text{V}$	AF-3 Board RV020 (RV021)
3. AFM Record Current Adjustment	REC	- Set up the unit a no signal state. - Set the REC LEVEL control volume to 0 position.	Connect an oscilloscope to pin ⑤ of CN103 on RP-17 board.  f1: adjust with RV017 f2: adjust with RV015	oscilloscope	f1: $55 \pm 2\text{mVp-p}$ f2: $200 \pm 5\text{mVp-p}$	AF-3 Board RV017 (RV015)
4. RF Input Level Adjustment Note: Make this adjustment after the AFM record current adjustment has been performed.	REC/PB	- Set the tracking control volume to the center click position. - Record with no signal input and playback the recorded part. (no modulation)	- Connect an oscilloscope to TP004 on AF-3 board. - Adjust RV101 for Ach and RV102 for Bch on RP-17 board.  TP4 RV102 RV101 70 ± 3 mVp-p 70 ± 3 mVp-p AFPG Bch Ach	oscilloscope	$70 \pm 3\text{mVp-p}$	RP-17 Board RV101 RV102

CORRECTION

ADJUSTMENT

✎ : Corrected portion

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1) Drum Free Speed Adjustment (SS-28 Board)

[Alignment method]

Adjust to $500 \mu\text{sec} \pm 10 \mu\text{sec}$ with RV301. (See Fig. 5-7.)

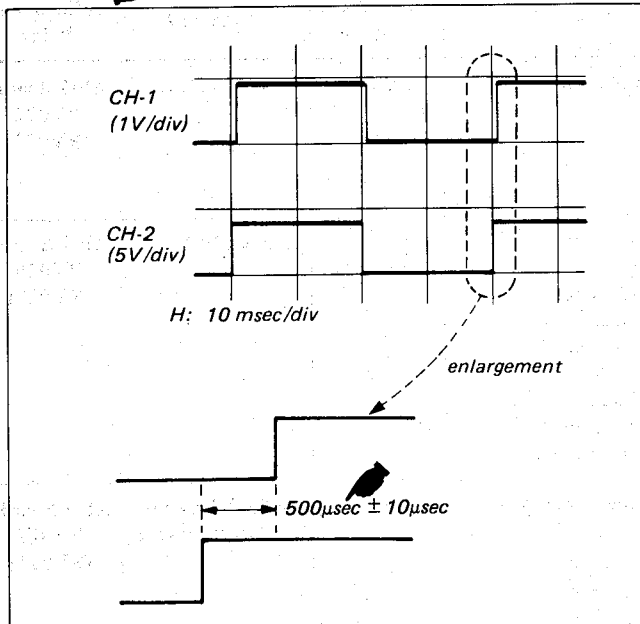


Fig. 5-7. Drum free speed adjustment

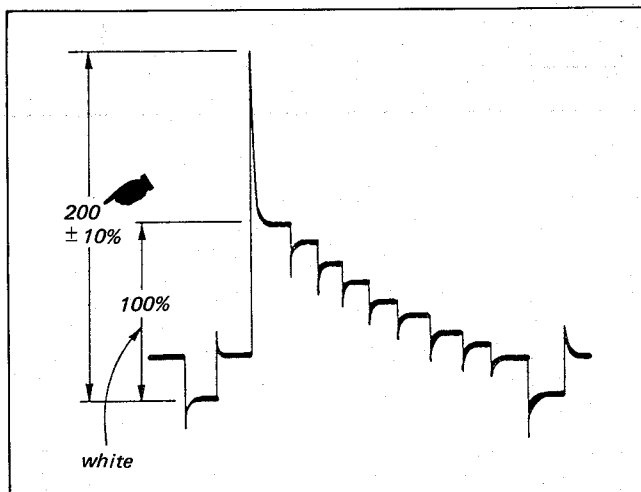
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7) White Clip Adjustment (YC-28 Board)

Mode: E-E
Signal: GRAY SCALE
Digital voltmeter: Collector of Q038

[Adjustment method]

✎ Adjust RV013 so that white overshoot becomes $200\% \pm 10\%$.



8) Y Record Current Adjustment (RP-17 Board)

Mode: Record
Signal: None
Oscilloscope: Pin ① of CN001 (The last digits of the part number of RP-17 board is -11.)
TP001 (The last digits of the part number of RP-17 board is -12.)

[Adjustment method]

Adjust to $3.2\text{V} \pm 0.05\text{Vp-p}$ with RV003. (See Fig. 5-19.)

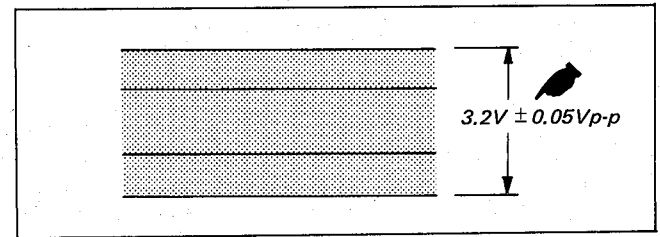


Fig. 5-19. Y record current adjustment

10) AFC Adjustment (YC-28 Board)

[Adjustment method]

- Rotate RV001 counterclockwise full seen from the pattern side.
- Adjust to $4.5 \pm 0.1 \text{ V dc}$ using RV007. (See Fig. 5-20)
- Check the frequency of IC006 pin ② (VCO output) by a frequency counter, and confirm that the frequency is the same as shown below.

5484375Hz ... when CN008 pin ② is "L"

5515625Hz ... when CN008 pin ② is "H"

Note: Make sure to adjust SECAM ACK after completing this adjustment. (Refer to 2) on page 54.)

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13) Chroma Record Current Adjustment (YC-28 Board)

[Adjustment method]

Adjust to $165\text{mVp-p} \pm 5\text{mVp-p}$ with RV008. (See Fig. 5-23.)

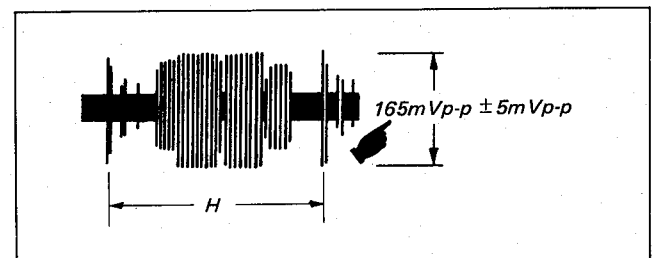


Fig. 5-23. Chroma record current adjustment

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1) Playback Frequency Characteristic Adjustment (RP-17 Board)

[Adjustment method]

- Rotate the tracking knob to make 2 MHz to be maximum.
- Rotate RV004 to adjust the 2 MHz level of Bch to be less than ± 20 mV to the 2 MHz level of Ach.
- Set the trigger slope to $-(+)$.
- Adjust the 5.2 MHz amplitude to 56 – 62% of the 2 MHz amplitude with RV002 (RV001).

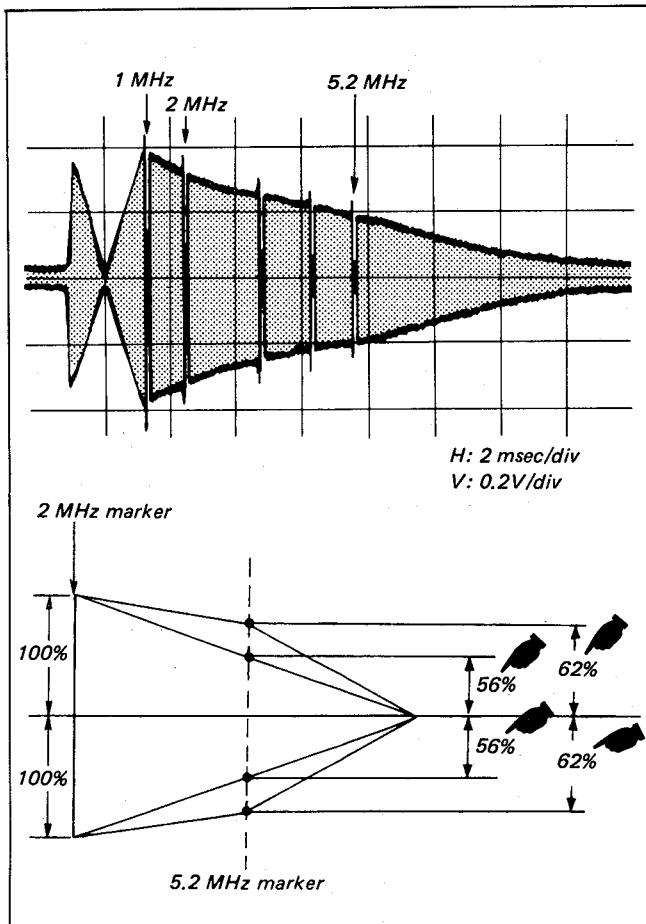


Fig. 5-24. Playback amplifier frequency characteristic adjustment

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2) Expand Adjustment (YC-28 Board)

[Adjustment method]

Adjust to 0.45 ± 0.01 V dc using RV020.

Note: Adjust more than 30 sec after turning on the power switch.

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5-6-1. Normal Audio System Adjustment (AM-5 Board)

Note: Set the BETA HI-FI switch to NORM.

[Adjustment method]

- ACE head adjustment... See "Mechanical Adjustment"
- Playback frequency characteristic adjustment
- Playback output level adjustment
- Bias oscillator check
- Record current adjustment
- Record bias adjustment
- Overall frequency characteristic check
- AGC output check
- Overall S/N check
- Overall distortion check

5. Record Bias Adjustment

6. Record Current Adjustment

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5-6-2. BETA Hi-Fi Audio System Adjustment (AF-3 Board)

Note: Set the LPF switch to OFF.

Set the BETA hi-fi switch to AUTO.

() is Rch.

[Adjustment method]

- E-E input level adjustment
- Dynamic emphasis adjustment
- AFM carrier frequency adjustment
- AFM record current adjustment
- Level meter level adjustment
- RF input level adjustment
- Playback level adjustment
- Playback level balance adjustment
- AFM deviation adjustment
- Overall frequency characteristic check
- Overall distortion check
- Overall S/N check

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4. AFM Record Current Adjustment

5. Level Meter Adjustment

6. RF Input Level Adjustment

NOTE: Make this adjustment after checking that the AFM record current has been adjusted.

Tracking control knob: center click position.

7. Playback Level Adjustment

8. Playback Ach and Bch Level Balance Adjustment

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9. AFM Deviation Adjustment

ADJUSTMENT MANUAL

West Germany Model



September, 1983

711B CHASSIS

File this adjustment manual with the service manual.



Consumer
VIDEO

Beta
B VIDEO CASSETTE RECORDER
SONY®

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1-2. DISMOUNTING THE RY-1 BOARD

- 1) Stand the set with the right side panel on the bottom.
- 2) Remove the two screws ①, holding the RY-1 board.
- 3) Swing open the RY-1 board in the direction shown by the arrow ④ and rest it on a cassette.

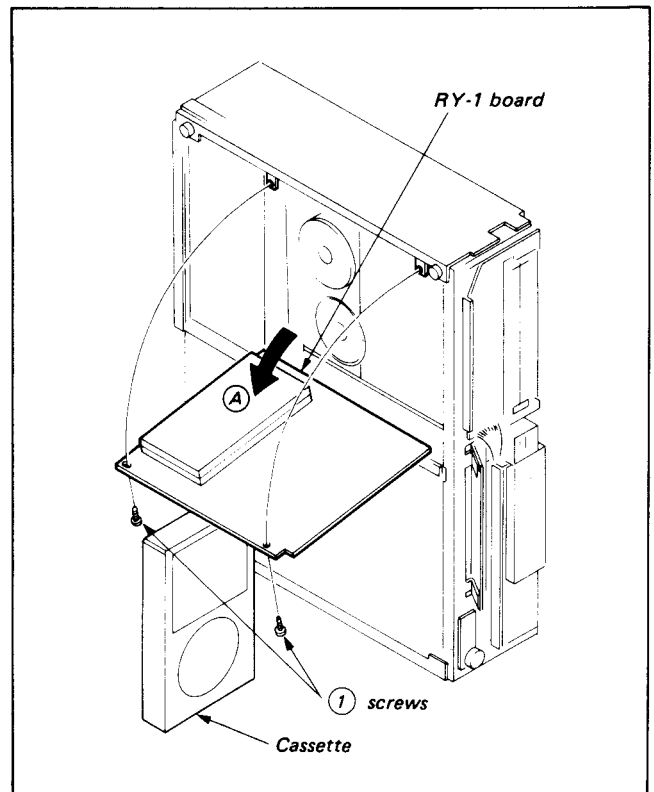


Fig. 1-2. Dismounting the RY-1 Board

1-3. DISMOUNTING THE TU-50 BOARD

- 1) Remove the four screws ① holding the TU-50 board.
- 2) Remove the TU-50 board in the direction shown by the arrow ④.

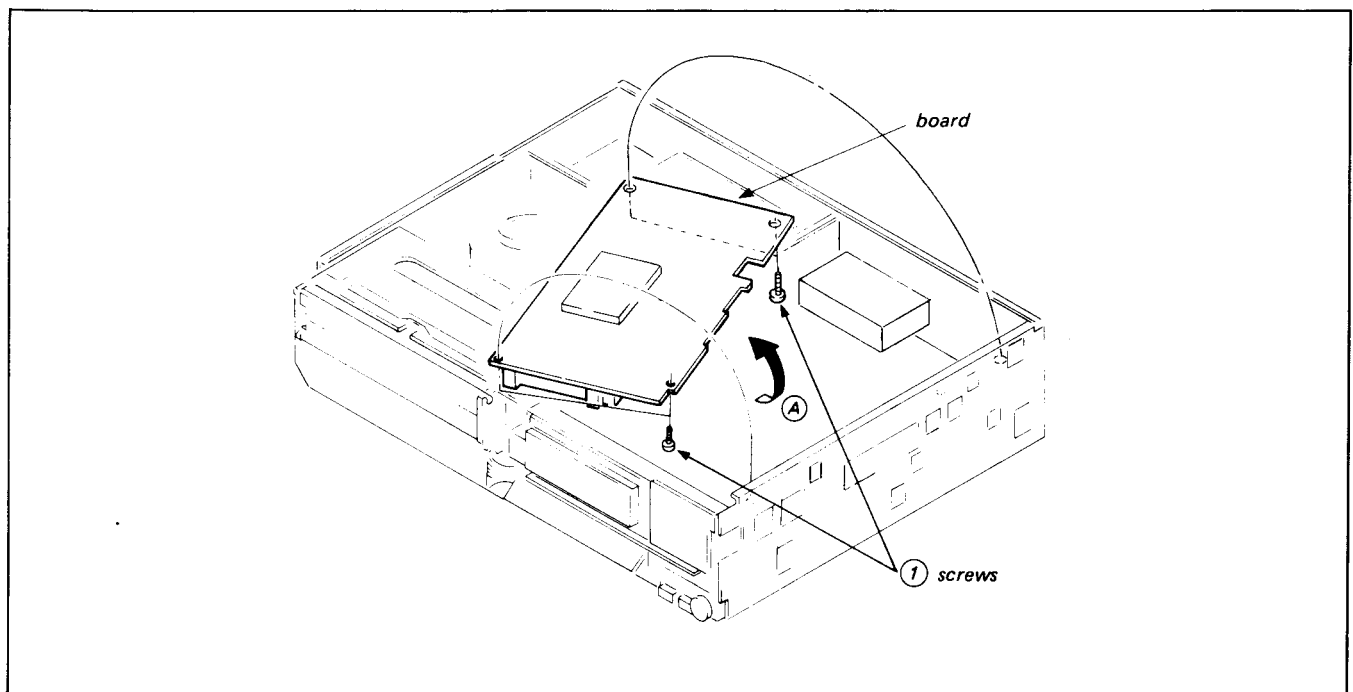


Fig. 1-3. Dismounting the TU-50 Board

SECTION 1

PREPARATION FOR MECHANICAL SECTION CHECK, ADJUSTMENT, AND REPLACEMENT

1-1. REMOVAL OF THE CASE AND FRONT PANEL

- 1) Remove the four screws ①.
- 2) Remove the upper case ② in the direction shown by the arrow ④.
- 3) Remove the seven screws ③ and the lower case ④ in the direction shown by the arrow ⑤.
- 4) Remove the five screws ⑤ and the front panel ⑥ in the direction shown by the arrow ⑥.

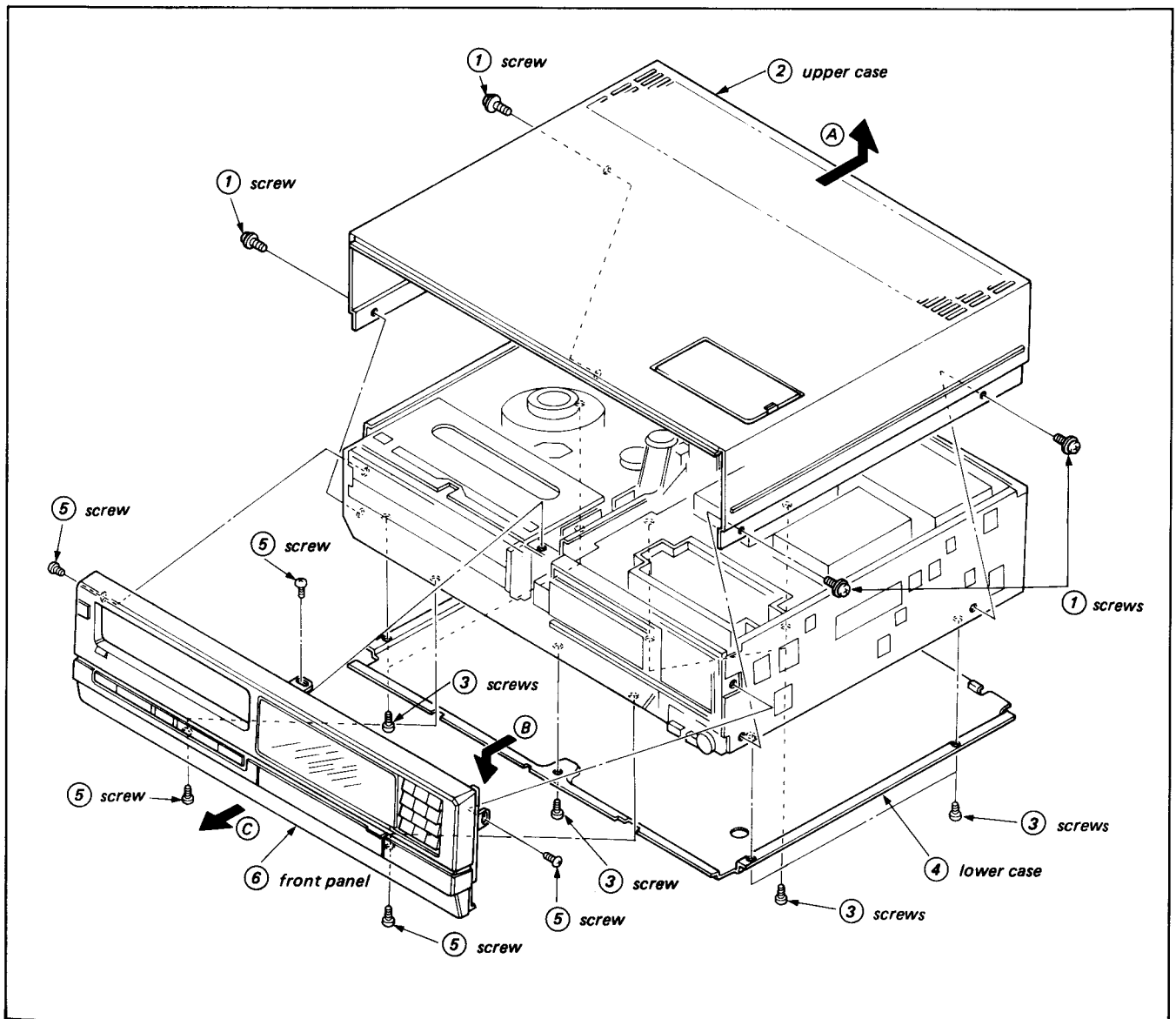


Fig. 1-1. Removal of the Case and Front Panel

1-4. DISMOUNTING THE YC-25 BOARD

- 1) Stand the set with the power source side on the bottom.
- 2) Remove the screw ① and the panel connector ②.
- 3) Remove the four screws ③, holding the YC-25 board.
- 4) Swing open the YC-25 board in the direction shown by the arrow ④ and rest it on a cassette.

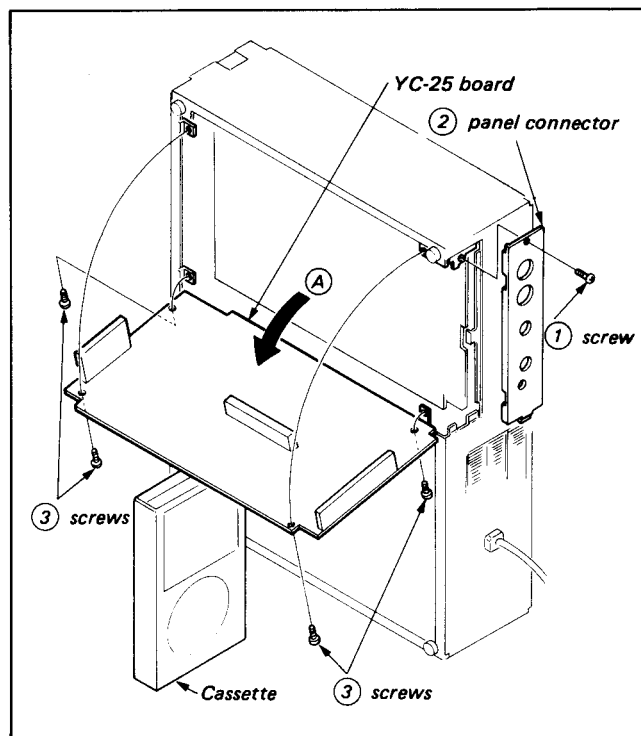


Fig. 1-4. Dismounting the YC-25 Board

1-5. REMOVING OF POWER BLOCK

- 1) Remove the two screws ①, and the shield plate.
- 2) Pull out the six connectors ②, (CN1, 2, 3, 4, 5, 6) from the power block side.
- 3) Remove the three screws ③ and the power cord bracket.
- 4) Remove the five screws ④, holding the power block.
- 5) Remove the power block in the direction shown by the arrow ⑤.

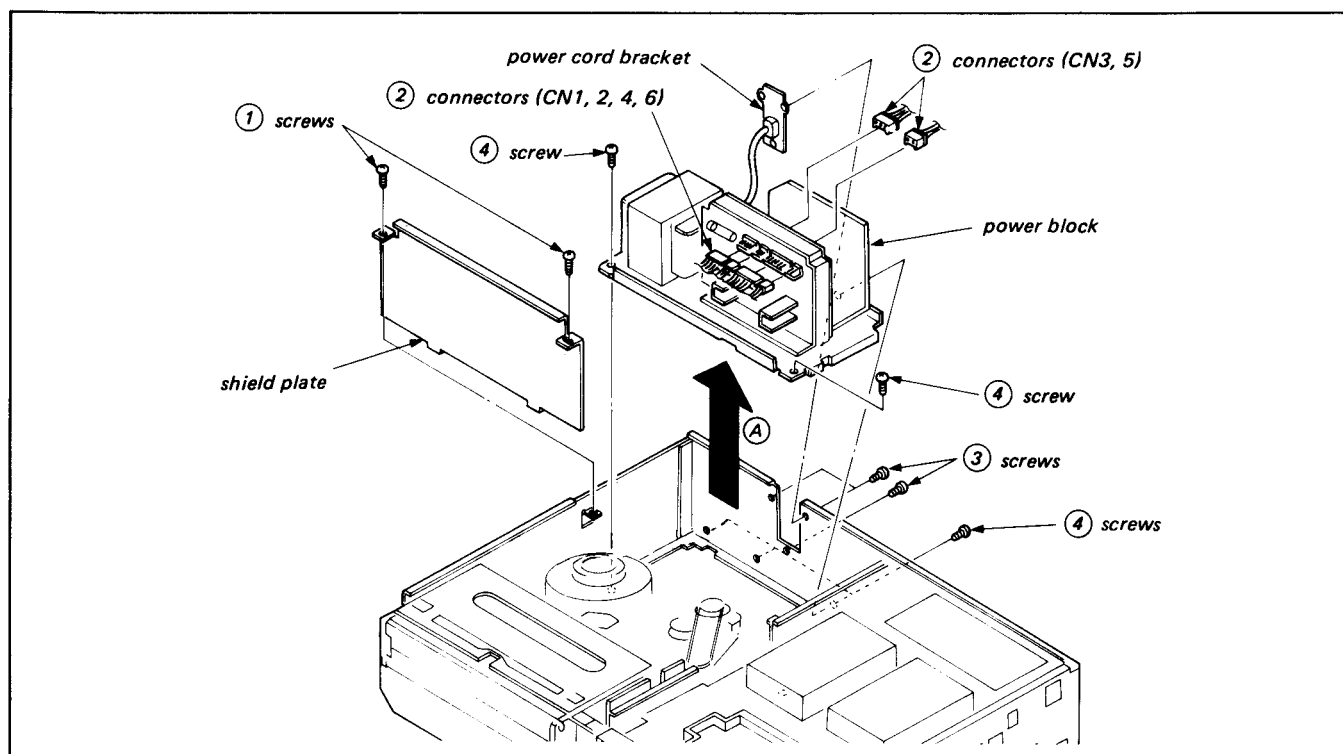


Fig. 1-5. Removing of Power Block

1-6. MECHANICAL OPERATION AFTER REMOVING THE FL CASSETTE COMPARTMENT

1-6-1. Attaining Threading Complete State after Removing the FL Cassette Compartment.

Refer to Section 3-6 describing the dismounting of the FL cassette compartment.

- 1) Short Pins (1) and (2) and also Pins (3) and (4) of the connector (CN301) on the CS-3 board using two wires.

Caution:

Do not contact other parts in the set with the wires.

- 2) Threading is started by turning on the POWER button while pushing the CASSETTE IN switch with a finger.

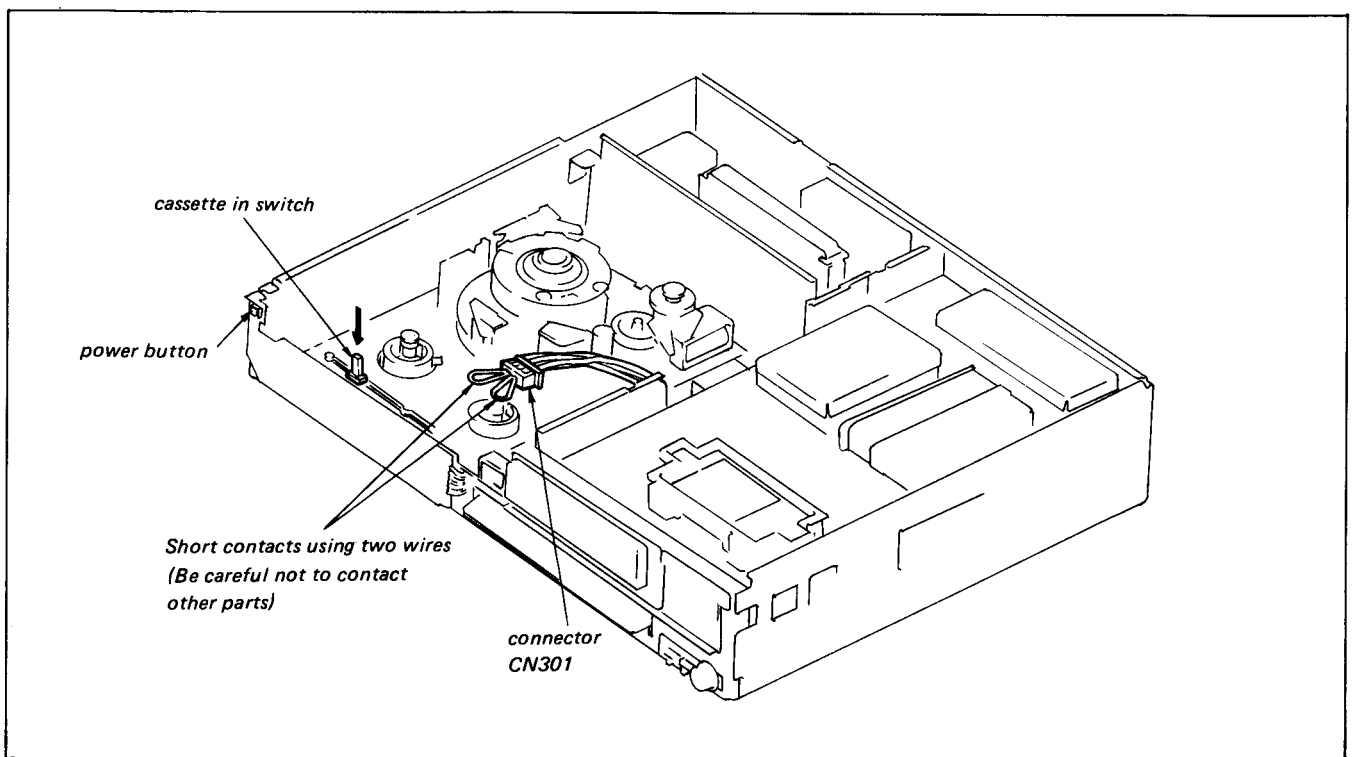


Fig. 1-6. Threading After Removing FL Cassette Compartment

1-6-2. Setting Up PLAY Mode without Inserting a Cassette

Press the PLAY button after setting up the threading complete state as described in 1-6-1.

1-6-3. Setting Up REC Mode without Inserting a Cassette

- 1) Thread as described in 1-6-1, then press the RECORD PROOF switch shown in the diagram.
- 2) Press the REC button while depressing the RECORD PROOF switch.

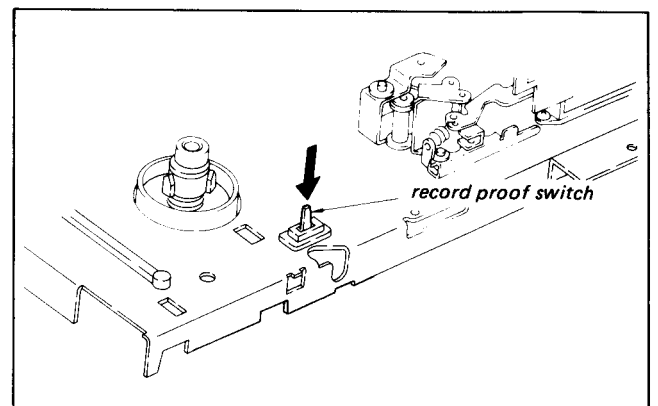


Fig. 1-7. Setting Up the REC Mode After Removing FL Cassette Compartment.

1-7. LOADING, THREADING, UNLOADING, AND UNTHREADING WHILE THE POWER IS OFF

1-7-1. Manual Loading and Unloading

- 1) Press stopper arm ① in the direction of the arrow ③ after releasing the prevention levers on the right and left sides inside the cassette compartment. Unlock the internal gear ②.
- 2) Rotate the internal gear ② in the direction of the arrow ④ until loading is completed.
- 3) Rotate the internal gear ② in the direction of the arrow ⑤ during unloading.

Note:

Rotate the worm gear ④ with a finger to load and unload when the loading belt ③ has become detached.

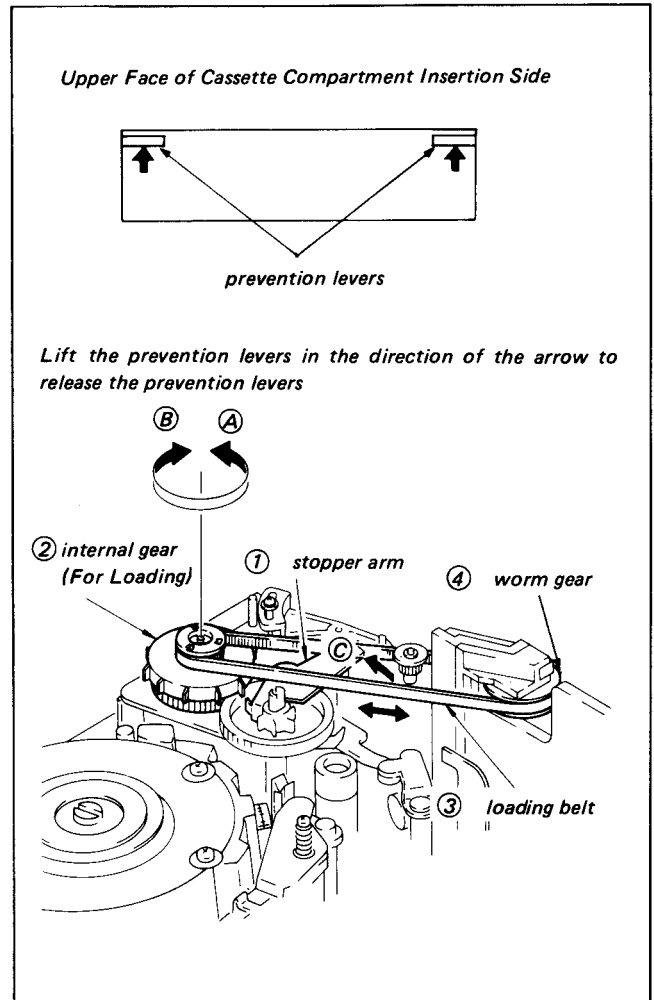


Fig. 1-8. Manual Loading and Unloading

1-7-2. Manual Threading and Unthreading

- 1) Rotate the loading gear in direction of the arrow ⑧ until threading is completed.
- 2) Rotate the loading gear in the direction of the arrow ⑨ for unthreading.

Caution:

Do not use a screwdriver, or other item, to rotate the loading gear. Push the side of the gear with a finger to rotate.

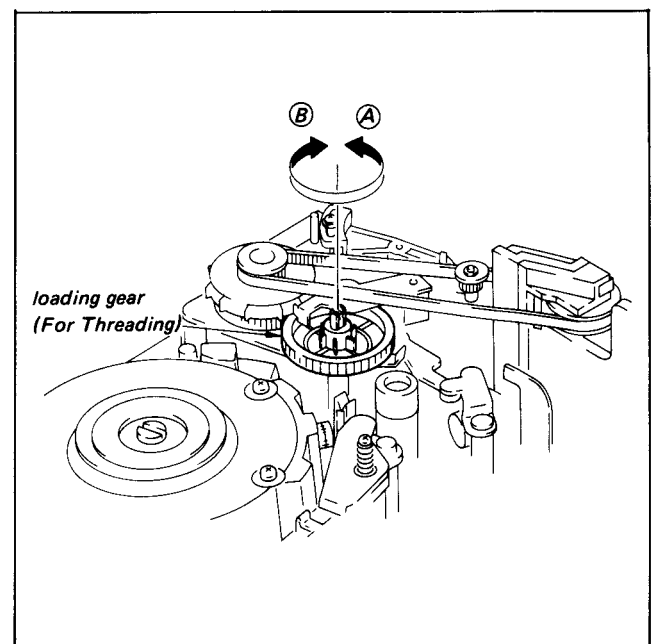
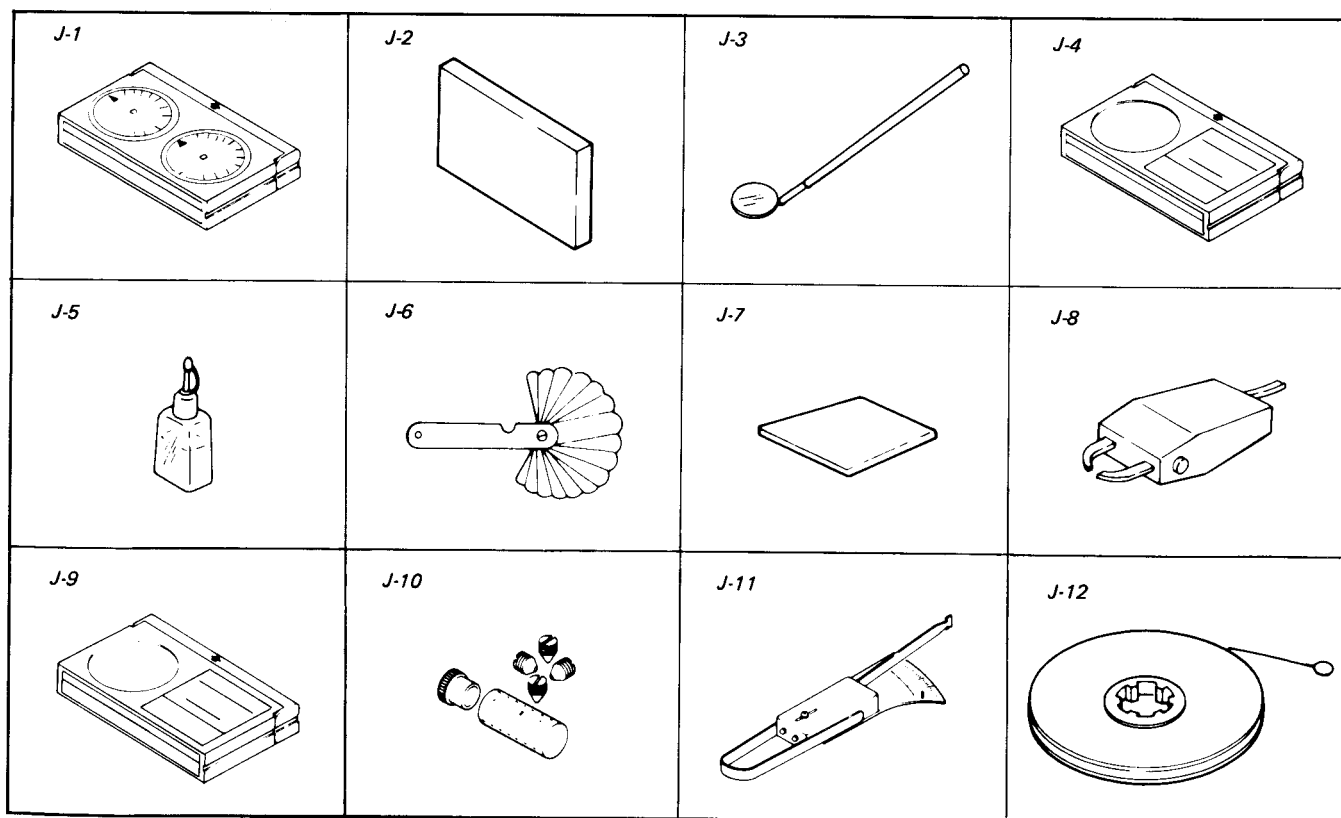


Fig. 1-9. Manual Threading and Unthreading

1-8. TOOLS AND FIXTURES REQUIRED

Ref. No.	Name	Part No.	Fixture No.
J-1	Forward-Back Tension Measurement Tape	J-6080-003-C	SL-0003C
J-2	Parallel Plate	J-6086-750-A	SL-0657
J-3	Small Adj. Mirror Spare Mirror	J-6080-029-A J-6080-030-1	SL-5052
J-4	Alignment Tape	8-969-995-52	KR5-2H
J-5	Cleaning Fluid	Y-2031-001-0	
J-6	Thickness Gauge	9-911-053-00	
J-7	Cleaning chamois	2-034-697-00	
J-8	Head Demagnetizer		
J-9	Lapping Tape	8-888-004-00	
J-10	Dihedral Adj. Screw	J-6080-013-1	SL-0013
J-11	Sector type gauge 50 g Max	7-732-050-20	
J-12	Reel Table Tension Fixture	J-6080-011-A	SL-0011

ITEMS J-5, J-6, J-7, J-8 can be obtained locally



SECTION 2

PERIODIC CHECK AND MAINTENANCE

The following maintenance and periodic checks are recommended to ensure optimum machine function and performance and to prolong machine and tape life.

2-1. MAINTENANCE AFTER REPAIR

Carry out maintenance work for the following items after repairing the machine regardless of the period of use.

2-1-1. Rotary Head Disc Assembly

- 1) Place a piece of chamois (tool Ref. No. J7) soaked in cleaning fluid (tool Ref. No. J5) lightly against the rotary drum assembly and clean the rotary head disc assembly by slowly rotating it by hand. (Important-Do not clean by rotating with the motor on.)
- 2) Do not clean the head tip by moving the chamois in a vertical direction. This may damage the head tip.

2-1-2. Cleaning of the Tape Transportation System

Clean the tape contact surfaces, such as the tape guide, drum assembly surfaces, capstan, and pinch roller using cleaning piece etc. soaked in cleaning fluid.

2-1-3. Cleaning of the Drive System

Clean the driving elements (reel base surfaces, etc.) using a cloth soaked in cleaning fluid.

2-2. PERIODIC CHECK ITEMS

Carry out maintenance checks for the following items depending on the duration of use.

Operating Hours (H)		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Maintenance & Check												
Tape Transportation System	Cleaning of tape transportation system	○	○	○	○	○	○	○	○	○	○	This cleaning must be done whenever a repair is made.
	Cleaning and degaussing of ACE ass'y	○	○	○	○	○	○	○	○	○	○	
	Cleaning & degaussing of video disk ass'y	○	○	○	○	○	○	○	○	○	○	The life of the head varies, depending on operational conditions and method.
Driving System	Loading belt	○	○	○	○	○	○	○	★	○	○	• This cleaning must be done whenever a repair is made. • Replacement must be done depending on operating hours on the table, or every two years.
	Cleaning of iron core and opening of solenoid	—	—	—	○	—	—	—	○	—	—	Wipe iron core and opening of solenoid with dry cloth.
Performance Confirmation	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace the section which causes abnormal sound.
	Measurement of FWD back tension	—	☆	—	☆	—	☆	—	☆	—	☆	Confirmation must be made according to section Specified value: 30 ± 5 g·cm (When measured with torque cassette tape)
	Confirmation of brake system	—	☆	—	☆	—	☆	—	☆	—	☆	Confirmation must be made according to section
	Confirmation of record & playback functions	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Perform the confirmation whenever repair is made.

○ Cleaning ★ Replacement ☆ Confirmation

Note: When overhauling, refer to the above for part replacement.

SECTION 3

CHECK, ADJUSTMENT, AND REPLACEMENT PROCEDURES

3-1. REPLACEMENT OF ROTARY HEAD DISC ASSEMBLY

3-1-1. Removal of Rotary Head Disc Assembly

- 1) Unscrew the two screws ① holding the damper assembly and remove it.
- 2) Remove the hexagonal socket bolt ② with an Allen wrench and dismount the upper drum assembly.

Note:

Remove the upper drum while rotating it, without moving the adjust plate ④. Be very careful not to move the adjust plate ④, or tape path will be affected.

- 3) Unsolder the rotary head disc circuit board. (four red and white lead wires)
- 4) Remove the two hexagonal socket bolts ③ and dismount the disc assembly.

Note:

Be very careful not to touch the head tip, or touch it against anything.

3-1-2. Replacement

- 1) Position the rotary head disc, paying attention to the direction of the red and white lead wires.
- 2) Tighten the hexagonal socket bolt ③ and solder the lead wire.

Note:

Solder securely, being careful not to break the lead wires.

- 3) Mount the upper drum without moving the adjust plates ④ as when dismounting it and tighten the hexagonal socket bolt ② while pressing two height adjust sections.

Caution:

Be careful not to touch the head tip when replacing the drum.

Note:

When replacing the rotary drum head, it may be difficult to remove it from the head disc. In this event, follow the procedure below. (Fig. 3-2)

- (1) Remove the hexagonal socket bolts ③ bolting the rotary head disc assembly.
- (2) When the rotary head disc assembly is fitted tightly and cannot be readily dismounted, alternately and slowly insert the two hexagonal socket bolts ③ unbolted in (1) above it removal holes at 90° to the mounting holes. The rotary head disc assembly can be lifted by the force of the two screws and dismounted easily.

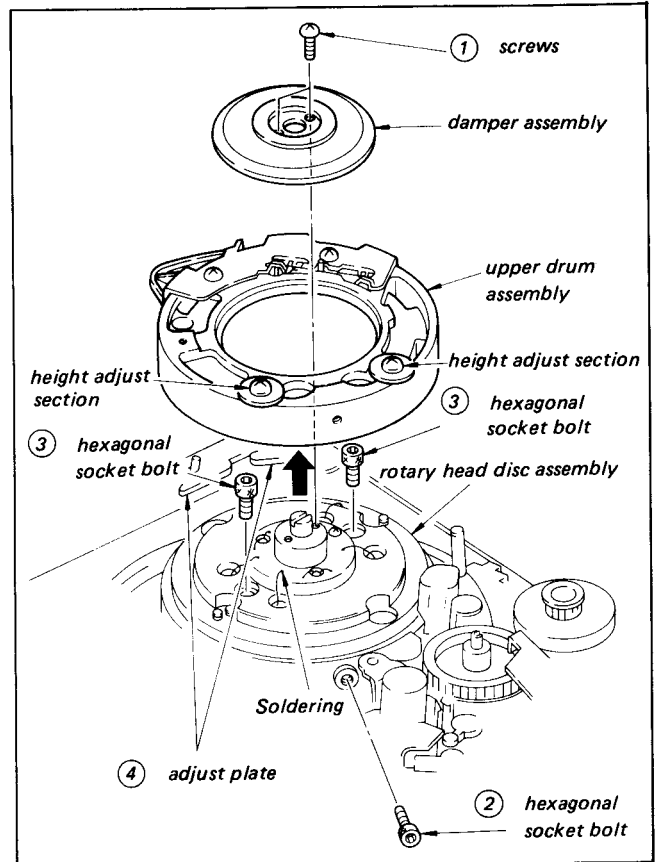


Fig. 3-1. Dismounting the Rotary Head Disc Assembly

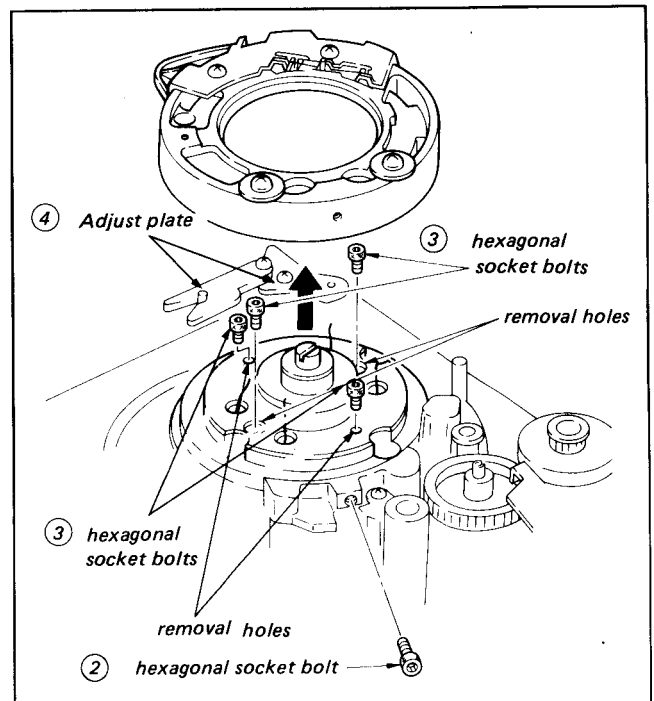


Fig. 3-2. Replacing Rotary Head Disc Assembly

3-2. VIDEO HEAD DIHEDRAL ADJUSTMENT

Generally this adjustment is not necessary except after video head disc replacement. (Video head discs for repair and replacement are precision adjusted using a microscope, and there is virtually never a need for readjustment.)

When determining the appropriate video head angle, play back an alignment tape. Make sure the tracking control knob is set at the center click position. When the check is made at a position other than the center click (tracking is off), the pictures will be played back as if the angle is wrong even if it is correct.

Be sure the ACE assembly position adjustment is completed (refer to "Tape Path Adjustment") before making this adjustment.

[Checking Method]

Play back the monoscope signal section of the alignment tape (KR5-2H) after setting the tracking control knob at the center click position. Verify that only one monoscope perpendicular line is played back immediately underneath the switching pulse, and not two lines.

If only one perpendicular line can be seen, the angle is correct, and no adjustment is needed.

If there are two, adjust as follows.

[Adjustment Procedure]

1. As shown in Fig. 3-3, screw in the two angle adjustment screws (Tool Ref. No.J-10) so that the lead wires from the video head are on the same level as the red adjusting screw hole and the top of the adjusting screw hole, and the top of the adjusting screw is on the same level as the top of the video head disc.

(If not screwed in sufficiently, the heads of the adjustment screws hit the upper drum, and the video head disc no longer rotates. Conversely, if they are screwed in too far, the head base moves, and the angle of the video head shifts considerably.)

Caution:

The white lead wire is a reference wire and should never be moved.

2. Screw in either one of the two adjustment screws until it feels tight. Additional tightening beyond this position moves the video head and so the angle can be adjusted.
3. Play back the monoscope signal section of the alignment tape (KR5-2H) and verify the angle. If the angle of the perpendicular line is larger than before adjustment, screw the adjustment screw counterclockwise to loosen and adjust the screw on the other side.
4. After adjusting, unscrew and check again.

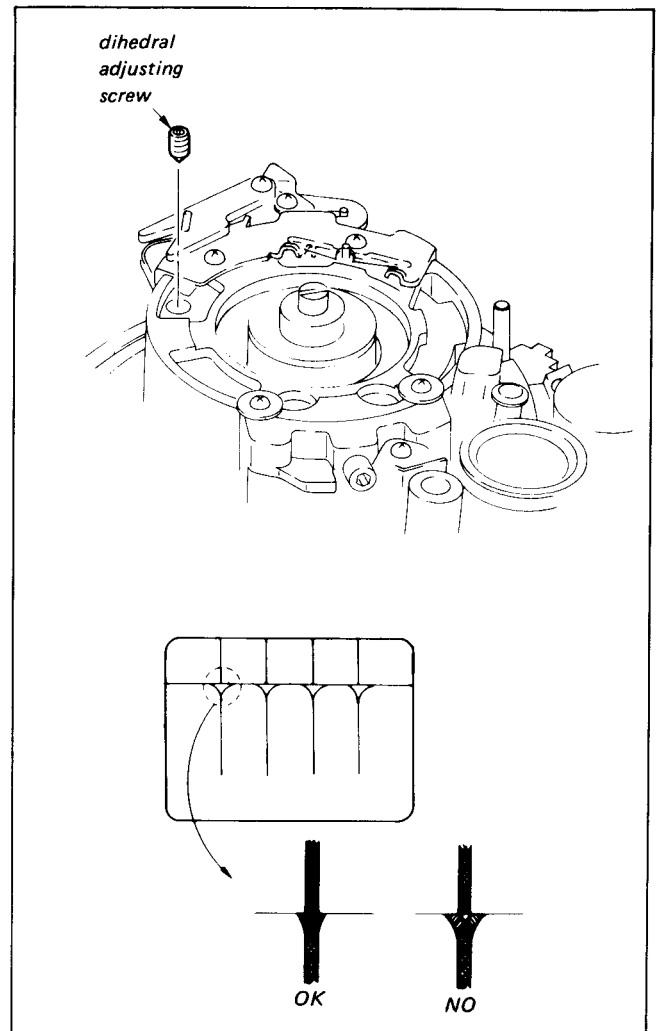


Fig. 3-3. Video Head Dihedral Adjustment (1)

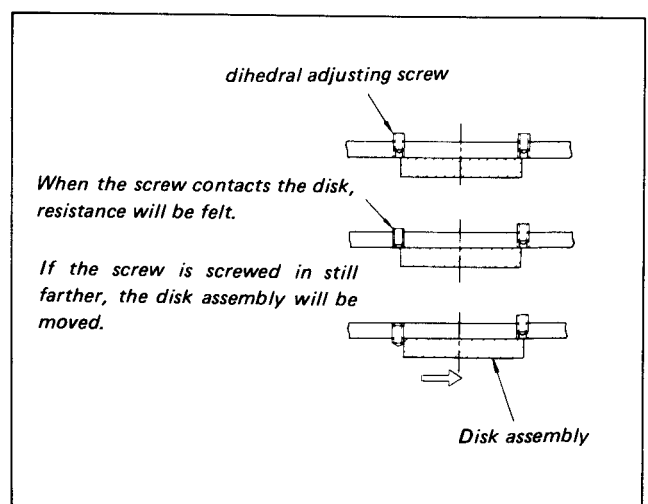


Fig. 3-4. Video Head Dihedral Adjustment (2)

3-3. REPLACEMENT AND ADJUSTMENT OF DRUM ASSEMBLY

3-3-1. Replacement

- 1) Measure and record the two gaps (A) between the upper drum tape holding section and the adjust plates (in Fig. 3-5). (Do not forget to do this, as the adjust plate mounting position affects the tape path.)
- 2) Unscrew the screws ① shown in Fig. 3-5 and remove the tape guide ground plate and adjust plates (2) and (3-1).
- 3) Remove the connector and three drum mounting screws from the bottom of the chassis and remove the drum assembly body.
- 4) Re-assemble the parts in reverse order.
- 5) Adjust according to "Tape Path Adjustment" after replacing the drum.

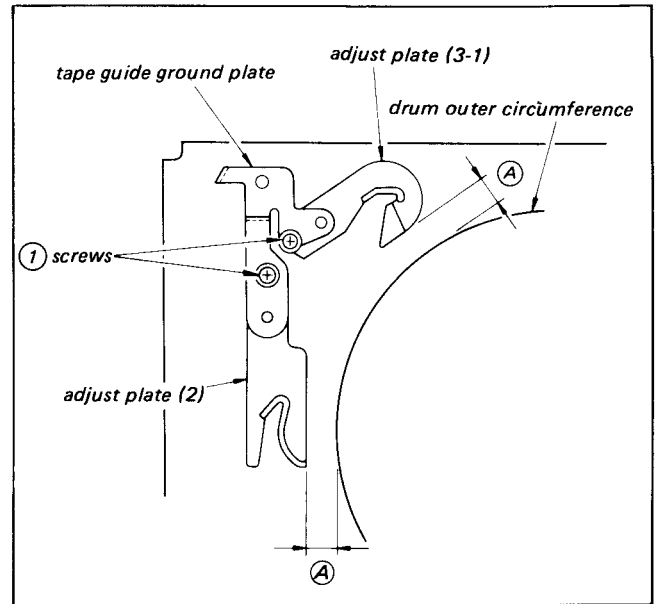


Fig. 3-5. Replacing Drum

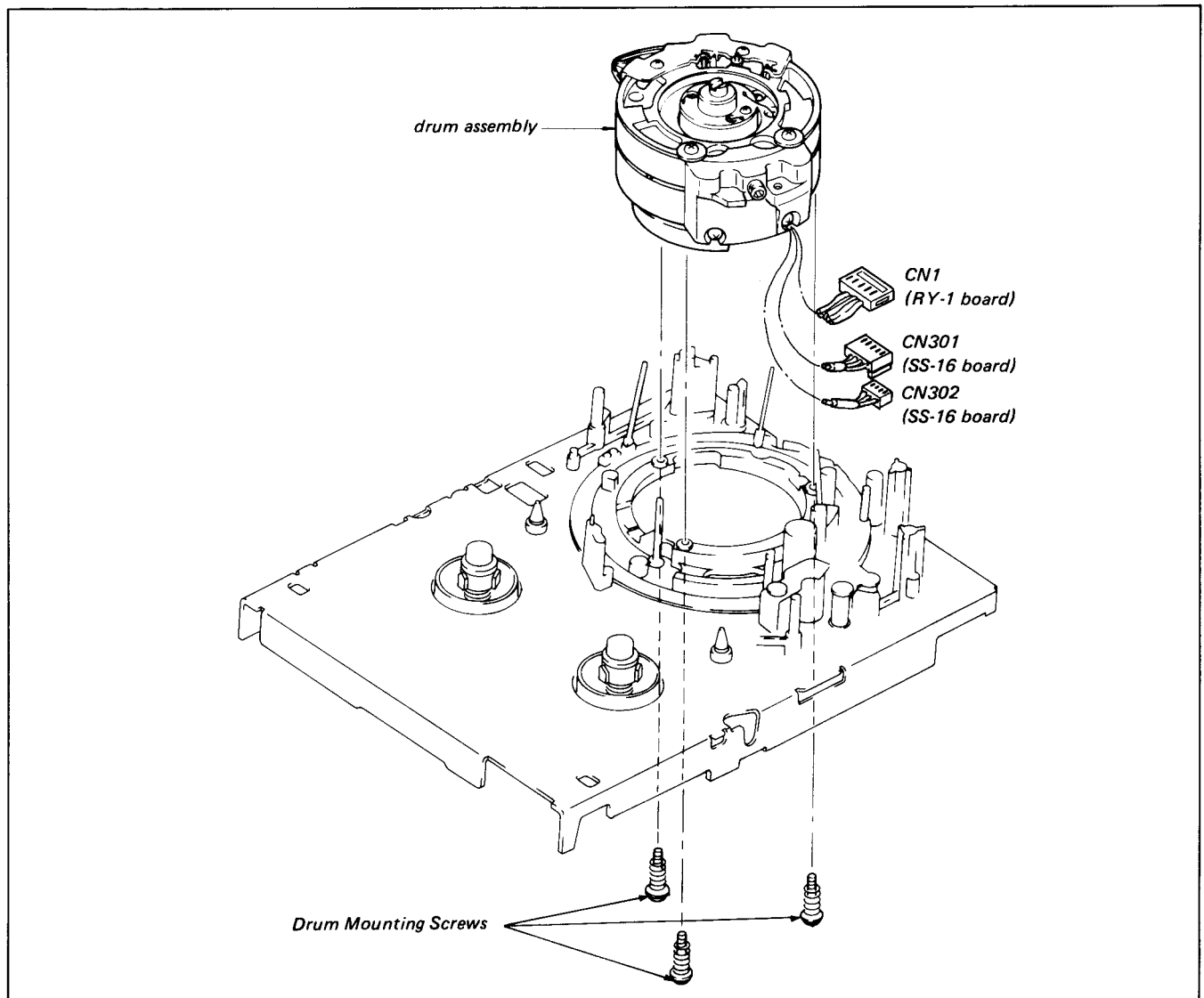


Fig. 3-6. Dismounting Drum Assembly

3-3-2. Motor Clearance Adjustment when Replacing Drum Assembly

When replacing the drum assembly, adjust so that clearance between the rotor and coil is 0.3 — 0.6 mm. (See Fig. 3-7)

[Procedure]

- 1) When re-assembling the drum, use the spacer which was removed and confirm that the 0.3 mm side of the clearance gauge included with the repair drum can be inserted, and that the 0.6 mm side cannot be inserted.
- 2) If this specification is not satisfied, dispose of the old spacer and use the spacers (0.3 mm × 4) included with the new repair drum as needed.

* Clearance Confirmation

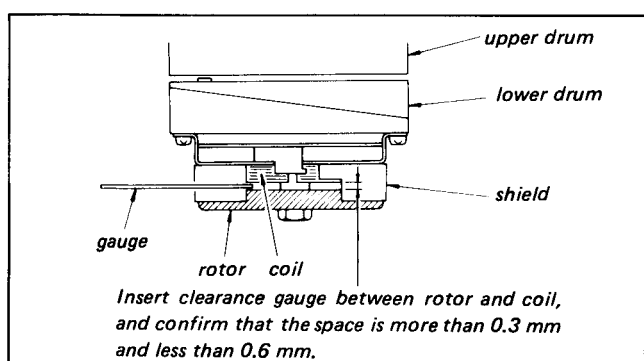


Fig. 3-7. Adjusting Motor Clearance When Replacing Drum Assembly

[Removal of Stator, Rotor]

- 1) Remove nut ① and washer ②.
- 2) Remove rotor ③ from stator ④.
- 3) Unscrew the two screws ⑤ and remove stator from drum body.

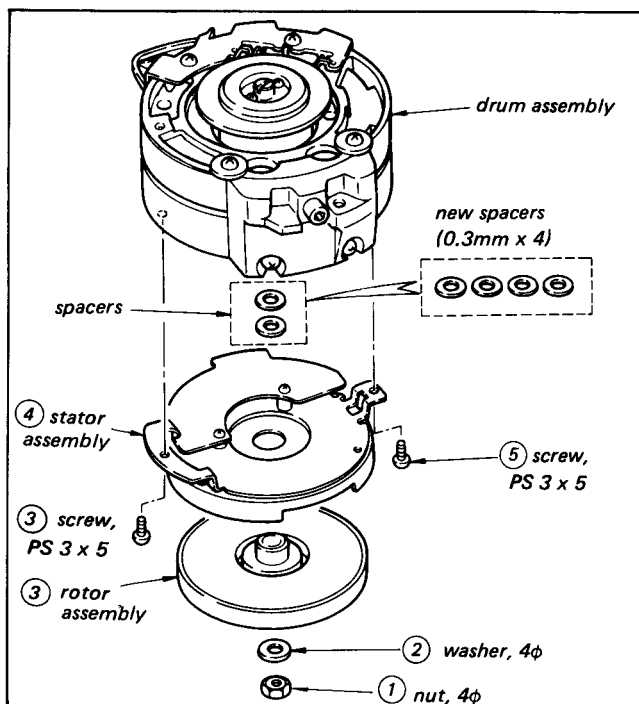


Fig. 3-8. Dismounting Stator and Rotor When Replacing Drum Assembly

3-4. REPLACEMENT AND ADJUSTMENT OF CAPSTAN MOTOR

3-4-1. Removal of the Capstan Motor (Fig. 3-9)

Unscrew screws ①, ②, ③ and remove the capstan motor from the mechanism chassis.

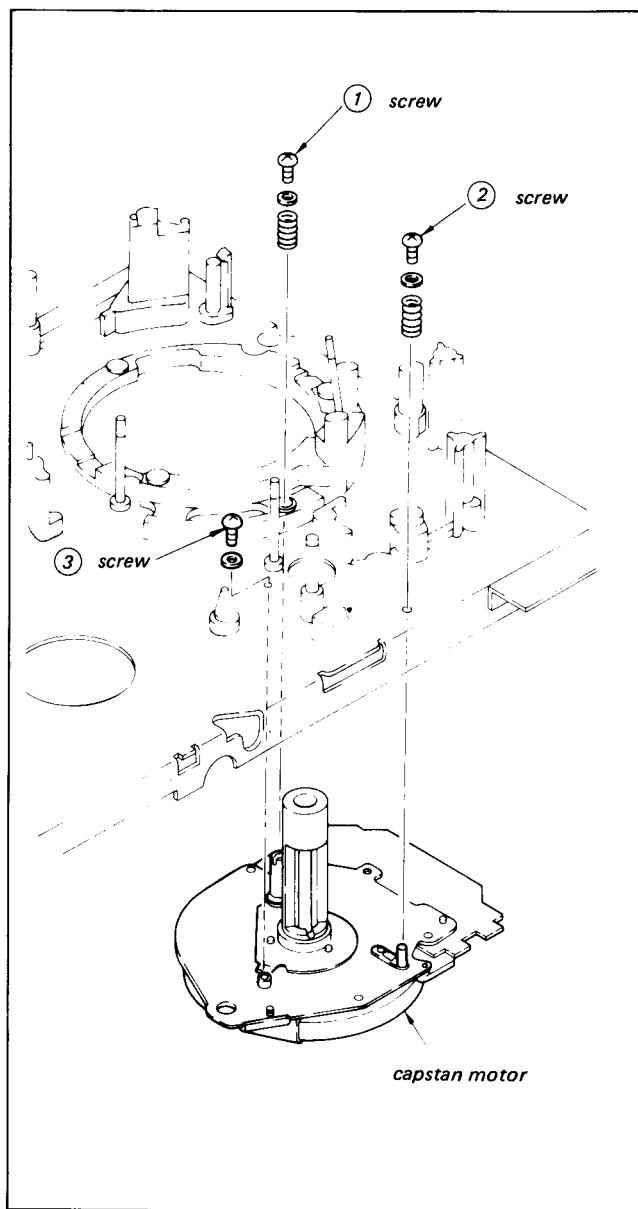


Fig. 3-9. Dismounting Capstan Motor

3-4-2. Perpendicular Adjustment of Capstan Spindle

Be sure to adjust as follows after the capstan motor has been replaced or removed:

- 1) Place parallel plate (Tool Ref. No. J-2) on No. 10 guide sleeve of the pinch press arm assembly perpendicularly, as shown in Fig. 3-10.
- 2) Loosen screw ①.
- 3) Rotate adjusting screw ② and align the capstan spindle perpendicularly.
- 4) Tighten screw ① and fix the capstan motor.
- 5) Adjust according to "Tape Path Adjustment".

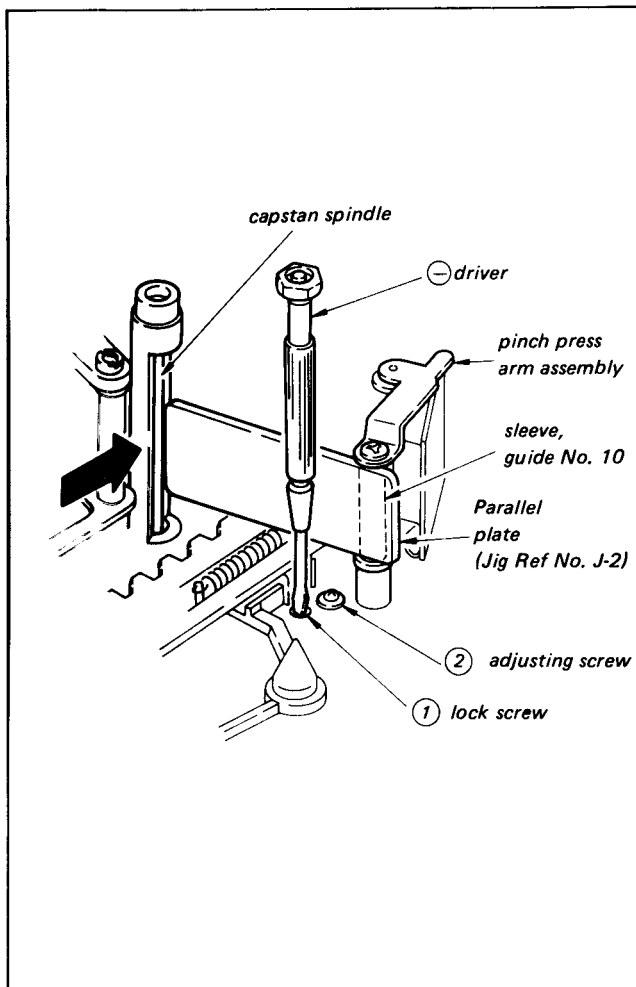


Fig. 3-10. Perpendicular Adjustment of Capstan Motor Spindle

3-5. REMOVAL OF S COIL SENSOR ASSEMBLY (Fig. 3-11)

- 1) Remove spring ① and disengage hook ② to pull out the S coil sensor assembly.
- 2) Disconnect the connector from CN604 of the SS-16 board.

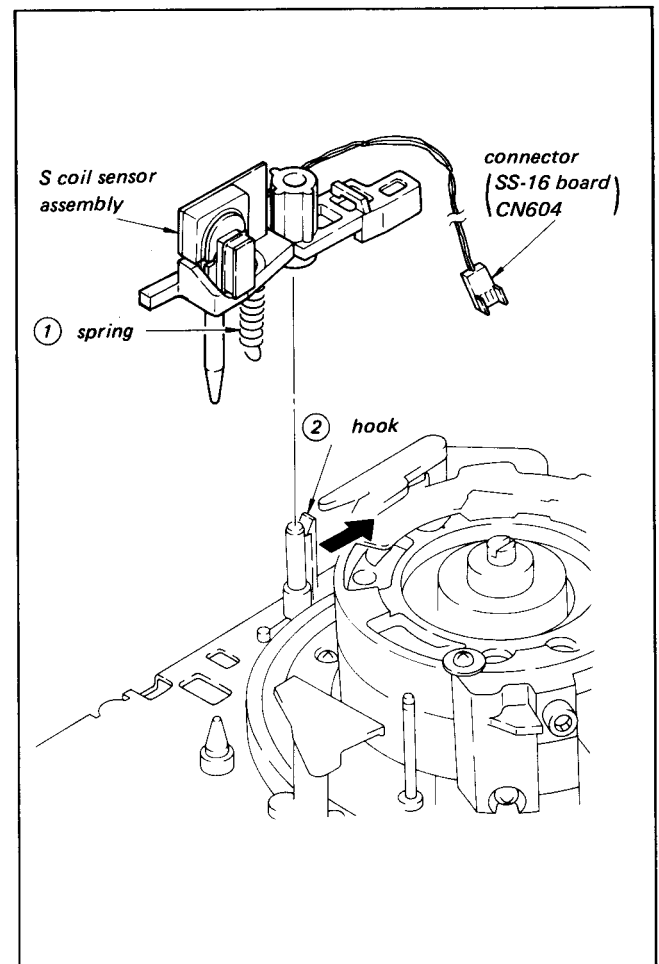


Fig. 3-11. Dismounting Tension Pickup Assembly

3-6. REMOVAL OF FL CASSETTE COMPARTMENT ASSEMBLY

- 1) Loosen the loading belt ①, exerting a force on the threading motor.
- 2) Remove the five mounting screws ② of the FL cassette compartment.
- 3) Disconnect the exposed connector from the CS-3 board (CN001) on the FL cassette compartment.
- 4) Lift the FL cassette compartment assembly in the direction shown by the arrow to remove.

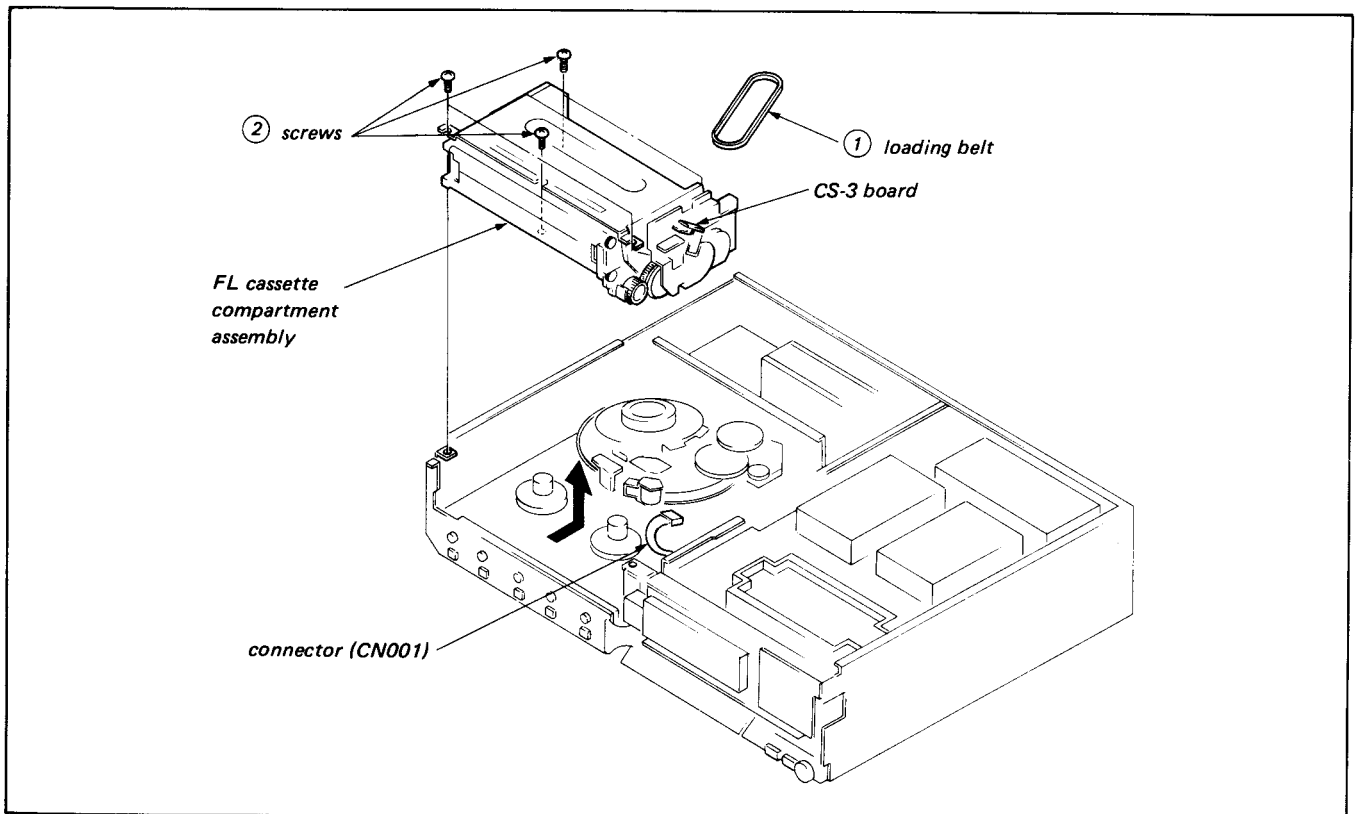


Fig. 3-12. Removal of FL Cassette Compartment Assembly

3-7. ADJUSTMENT OF FL CASSETTE COMPARTMENT ASSEMBLY

3-7-1. Mounting of FL Cassette Compartment Assembly (Fig. 3-13, 14)

- 1) Stretch the two hooks (2) of the FL cassette compartment on the mechanism chassis and place the cassette compartment in a predetermined position on the chassis.
- 2) Mount the FL cassette compartment assembly and loosely tighten the three screws (3).
- 3) Move the FL cassette compartment assembly longitudinally relative to the mechanism chassis, set in a predetermined position, then securely tighten the three mounting screws (3).
- 4) Suspend the loading belt (7) around the threading motor (4), tension pulley arm (5), and worm gear (6) and hold the loading belt (7) with the internal gear flange (8).
- 5) Push the car tension arm (5) in the direction of the arrow, to eliminate slack on the loading belt (7), then secure the arm (5) with the arm adjustment screw (1).
- 6) Insert the connector of the wire harness protruding from the body onto the connector CN001 (9) of the CS-3 board.

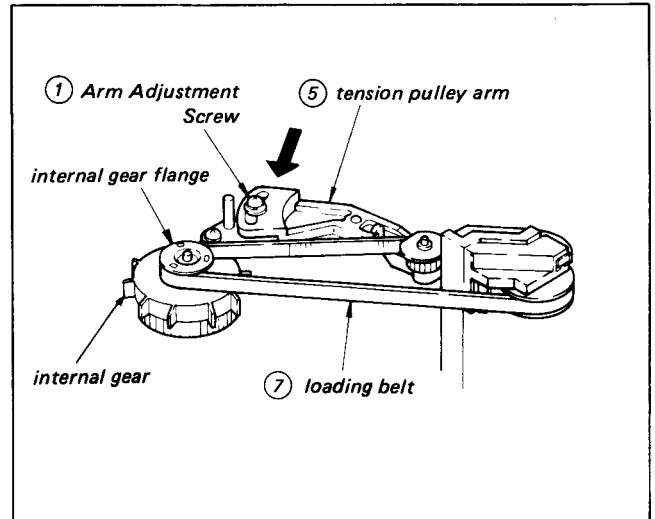


Fig. 3-14. Adjustment of Loading Belt

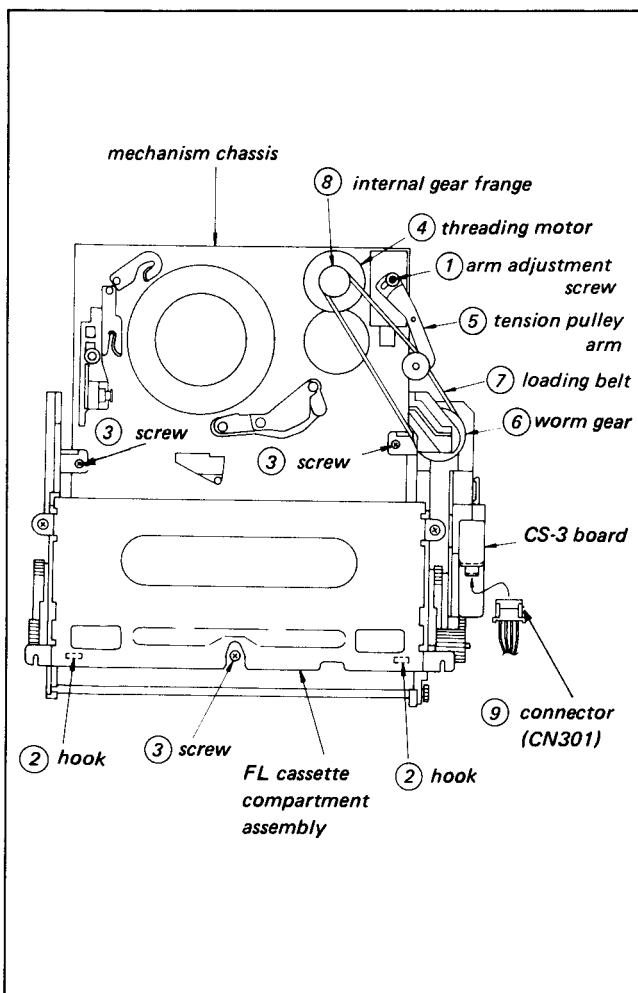


Fig. 3-13. Remounting FL Cassette Compartment

3-7-2. Adjustment of Cassette-ON Switch

Loosen the screw ② which is fixing the cassette-ON cam ①. Move the cassette-ON cam in the arrow direction so that the microswitch (cassette on) ⑤ is turned on when the gap between the left end of the driving roller ③ and the end/face of the worm gear holder ④ is 8 mm to 10 mm. Then fasten the screw ②.

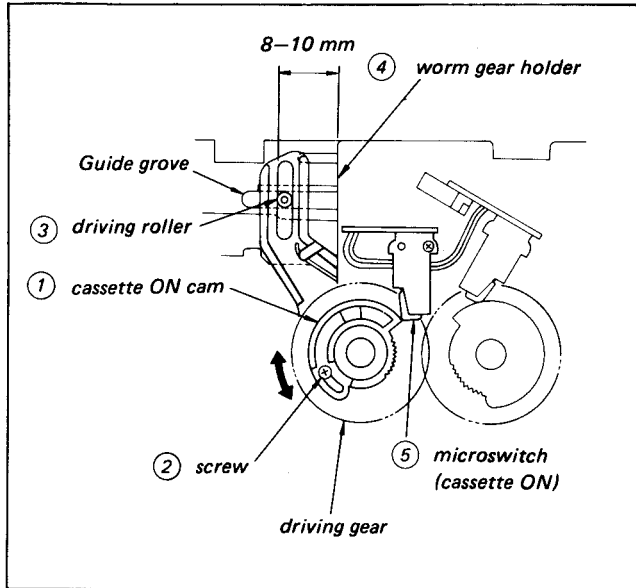


Fig. 3-15. Cassette-ON Switch Operation Check and Adjustment

3-7-3. Adjustment of Cassette-OFF Switch

Loosen the screw ② which is fixing the cassette-OFF cam ①. Move the cassette-OFF cam in the arrow direction so that the microswitch (cassette off) ⑤ is turned off when the gap between the left end of the driving roller ③ and the end face of the worm gear holder ④ is 16 mm to 18 mm. Then fasten the screw ②.

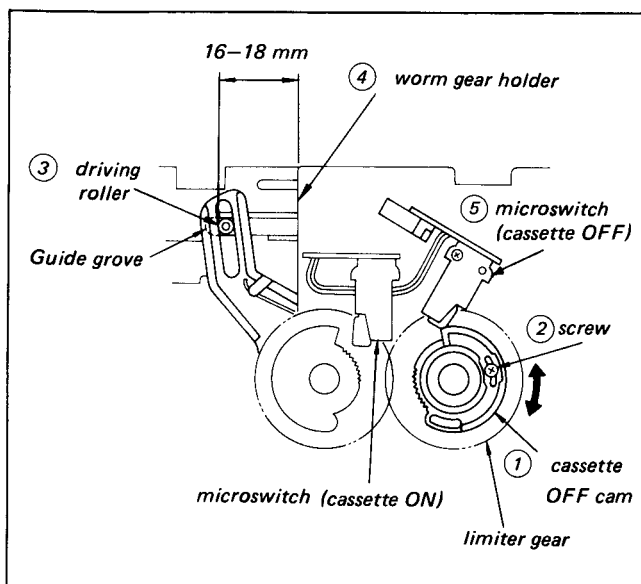


Fig. 3-16. Cassette-OFF Switch Operation Check and Adjustment

3-7-4. Check and Adjustment of Cassette Door Assembly

[Check Procedure]

Be certain that the upper door ② and lower door ③ become perpendicular when the switching door arm ① has fully returned in the direction of the arrow A.

[Adjustment Procedure]

Check that the switching door rack plate ④ is fully returned, fit in the directions of arrows B and C so that the upper door ② and lower door ③ become perpendicular when the tips of the switching door rack plate ④ and side plate, right ⑤ mismatch by about 1 mm, then match the teeth. Fit the outer door holder ⑥ into the side plate, right ⑤ and secure the upper door ② and lower door ③.

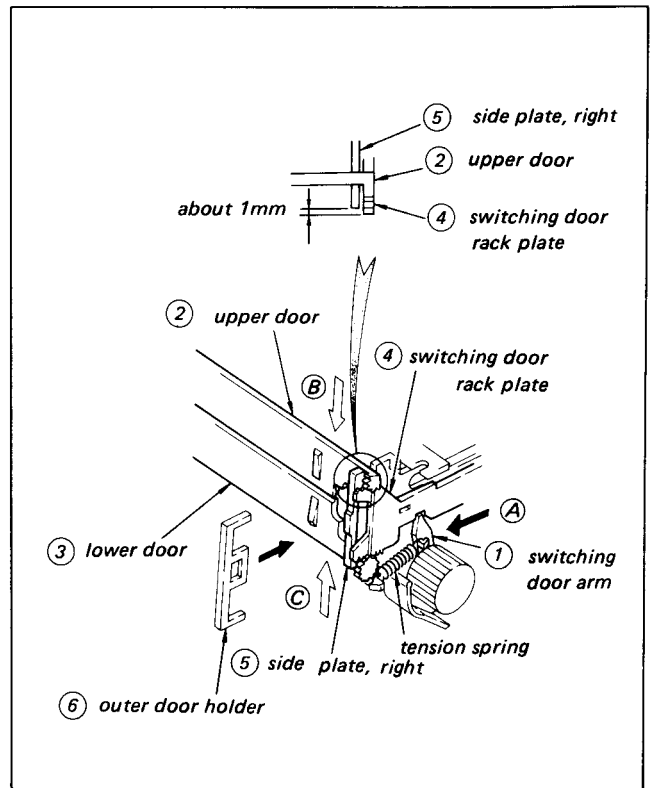


Fig. 3-17. Position Adjustment of Cassette Door Assembly

3-8. REMOVAL OF REEL BLOCK

- 1) Remove four screws ①.
- 2) Remove the reel block ②.

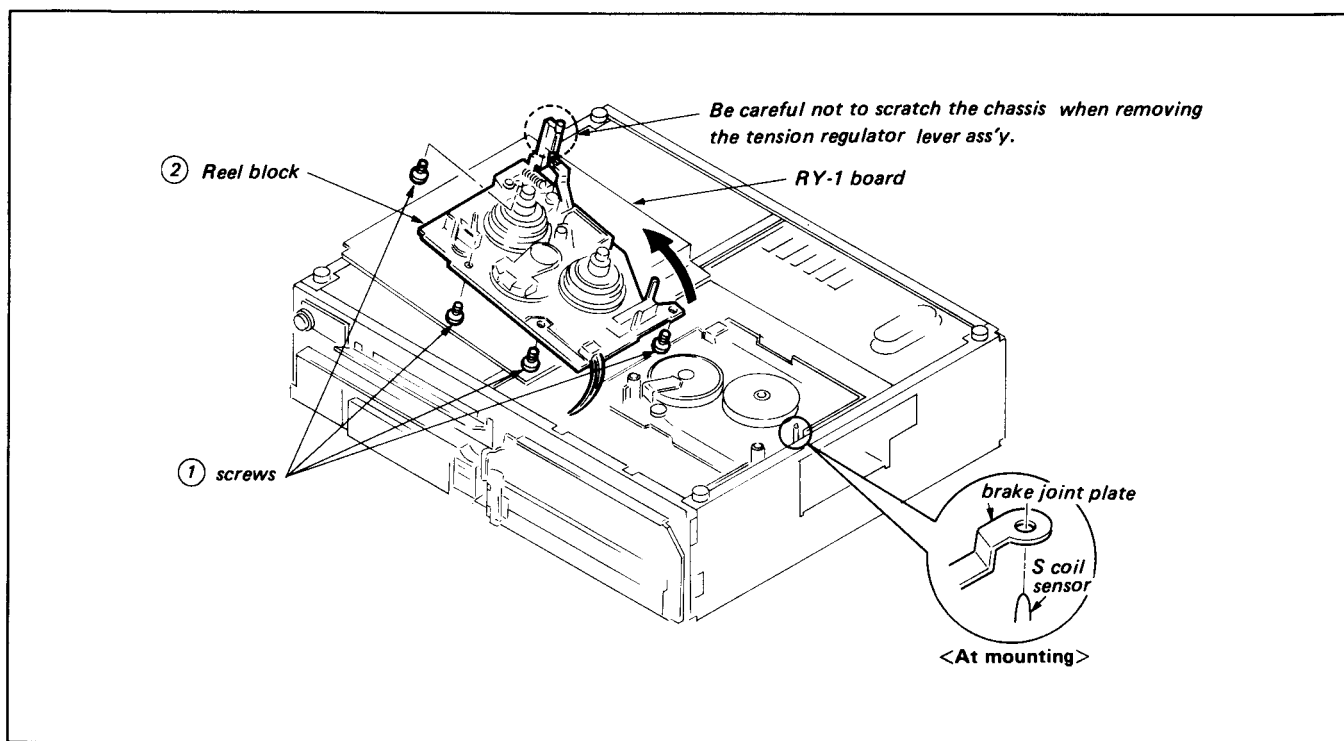


Fig. 3-19. Dismounting Reel Block

3-9. UNTHREADING CHECK

- 1) Press the EJECT button and unthread.
 - 2) Check that the actuator for the unthreading end switch is not tripped as shown in Fig. 3-20. (Slowly rotate the internal gear by hand and verify by the click sound.)
- * Refer to Paragraph 1-7-2 to thread manually.
Adjust according to Paragraph 3-15-2 if necessary.

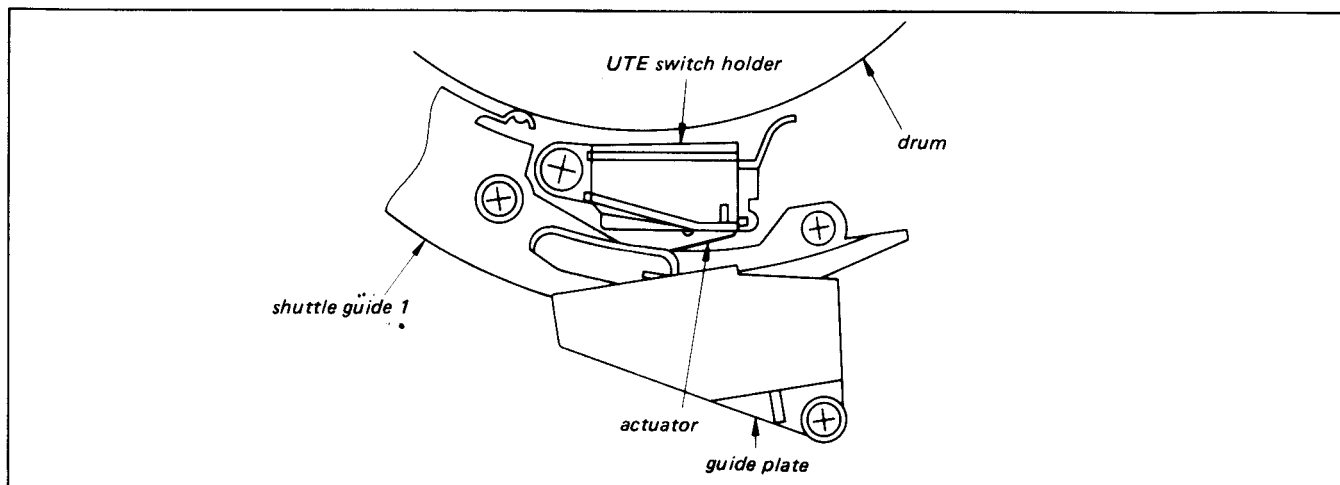


Fig. 3-20. UTE Switch

3-7-5. Position Matching of Right Worm Wheel of FL Cassette Compartment Assembly

In the FL cassette compartment assembly, the cassette holder feed rate is determined using a worm wheel system so that the cassette holder always moves parallel to the mechanism chassis. Therefore, cassette feeding cannot be performed properly unless the worm wheel gearing position is properly adjusted during subsequent assembly once gearing of this section has been moved from the normal position.

[Gear Positioning]

- 1) Prepare a rod about 1.5 mm thick and 200 mm long.
- 2) Pass the rod through the hole in the side plate, right and left (Perform on left and right sides.)
- 3) Insert the assembly comprising the driving arm, right ① and cassette-on cam ② on the positioning rod and assemble it on the right of the side plate, ③. Similarly assemble the driving arm, on the left of the side plate.
- 4) Insert the worm wheel ④ through the positioning rod as described in 3) above and assemble it on the right of the side plate ③.
- 5) Insert the assembly comprising the limiter gear ⑤ and cassette-off cam ⑥ on the positioning rod as in 3) and 4) above and assemble it on the right of the side plate ③.
- 6) After assembling, pull the rod out from the right side.

Note:

If a rod is not available, the holes can be lined up by eye.

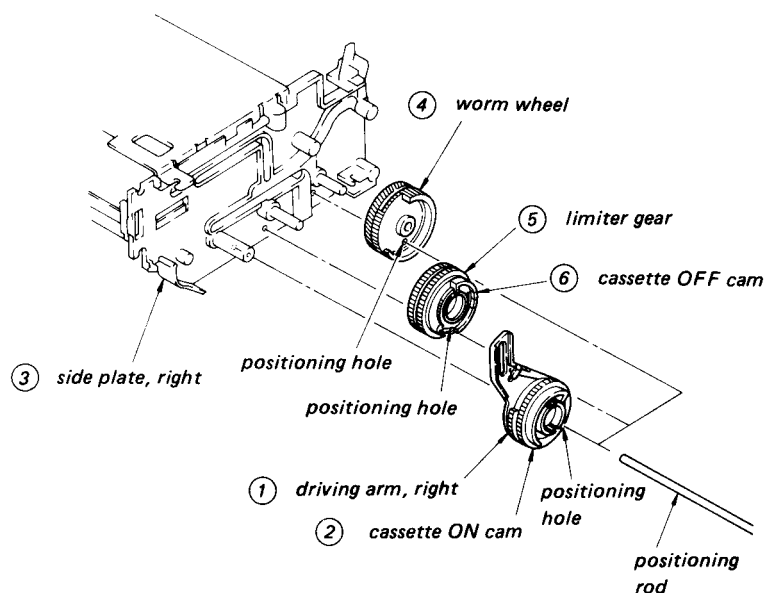


Fig. 3-18. Positioning of FL Cassette Compartment Worm Wheel

[Removal of Other Parts] (Fig. 3-22)

- 1) Measure the gap between the upper drum and the adjust plate as for replacement of the drum assembly. (Fig. 3-5)
- 2) Unscrew the two screws ① and remove the tape guide ground plate ② and adjust plate ③.
- 3) Unscrew the two screws ④ and remove the tape holder assembly ⑤
- 4) Unscrew screw ⑥ and remove the guide plate ⑦

- 5) Unscrew the two screws ⑧ and five screws ⑨ to remove the shuttle guide (1-YA) ⑩ and (2) ⑪ as well as the slant base assembly ⑫
- 6) Unscrew screw ⑬ and remove the pin link liner plate ⑭

Caution:

When the guide plate is removed, do not thread or unthread with the shuttle guide mounted.

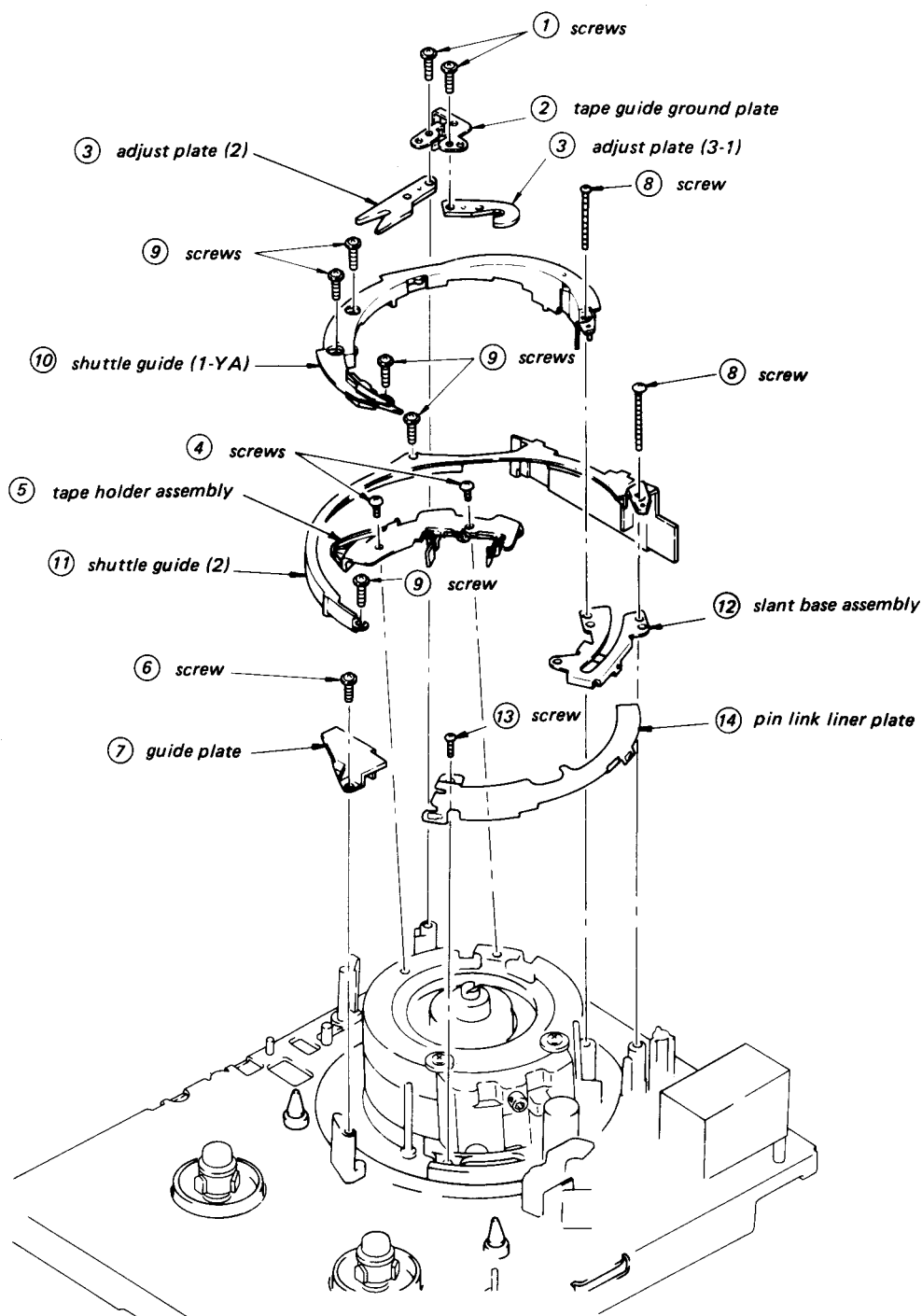


Fig. 3-22. Removing Other Parts

3-10. S THREADING RING REPLACEMENT AND ADJUSTMENT

3-10-1. Preparation for Removal of S Threading Ring

Remove ACE assembly, FE Head and Threading Motor.
(Fig. 3-21)

- 1) Unscrew the Phillips head continuous-thread stepped screw ①.
- 2) Remove the No. 6 guide nut ②, washer ③, spacer ④ and compression coil spring ⑤. Use a special notched screwdriver. (See Section 1-8. Tools and Fixtures Required)
- 3) Remove the two guide adjusting nuts ⑥ and the ACE assembly and FE head.

Caution:

ACE assembly and FE head are connected by a lead. Be careful when removing them. The compression coil spring underneath the ACE assembly does not have to be removed. However, be careful not to lose it.

- 4) Unscrew two screws ⑦ and remove the STOPPER ARM ASSEMBLY BLOCK ⑧.
- 5) Unscrew the two screws ⑨ and pull the threading motor assembly up to remove.

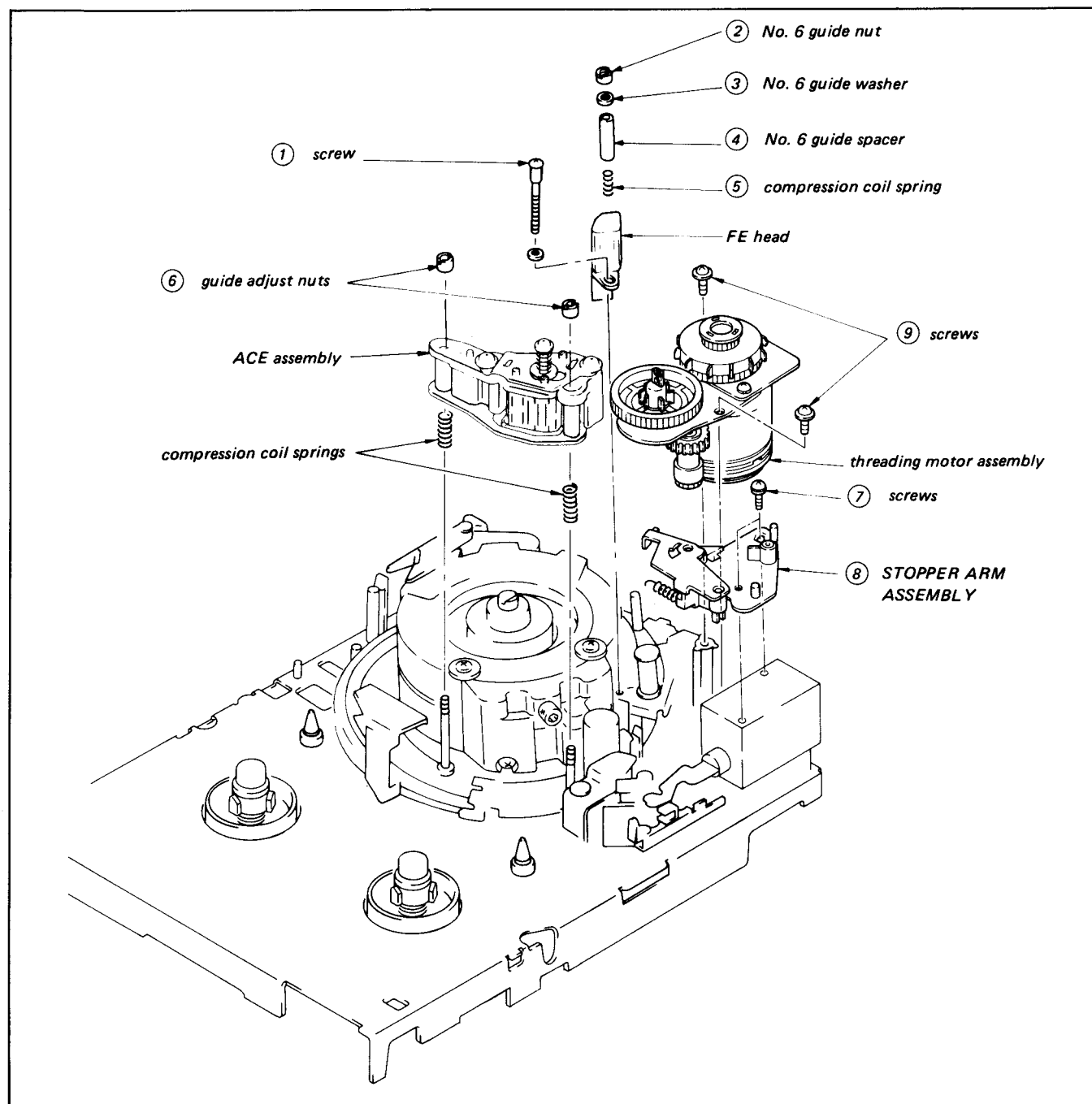


Fig. 3-21. Dismounting ACE Assembly, FE Head, and Threading Motor

3-10-3. Removal of No. 2 Guide

- 1) Unscrew the screw (1x3) ①.
- 2) Unscrew the screw (1.4x3) ②.
- 3) Remove the No. 2 guide ③.

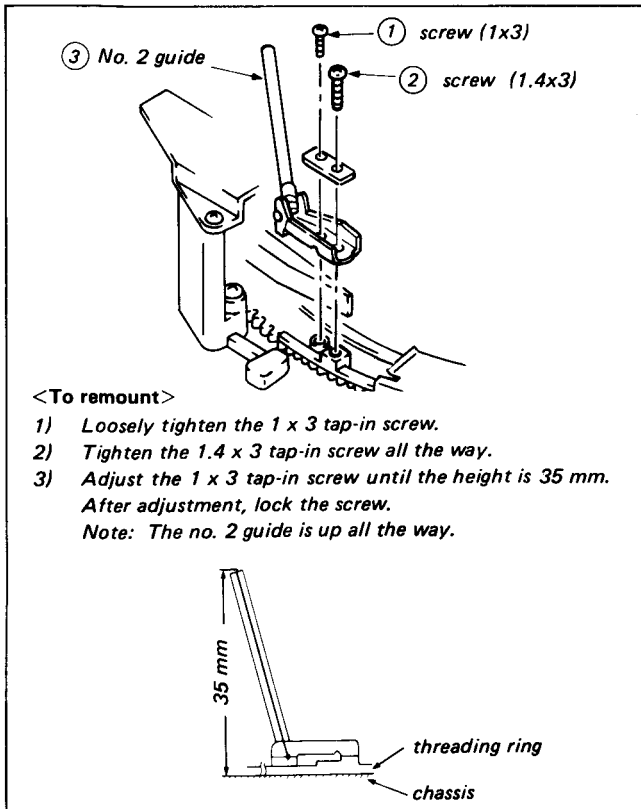


Fig. 3-24. Removal of No. 2 Guide

3-10-4. Removal of No. 3 Guide

- 1) Unscrew the screw (1x3) ①.
- 2) Unscrew the screw (1.4x3.5) ②.
- 3) Remove the No. 3 guide ③.

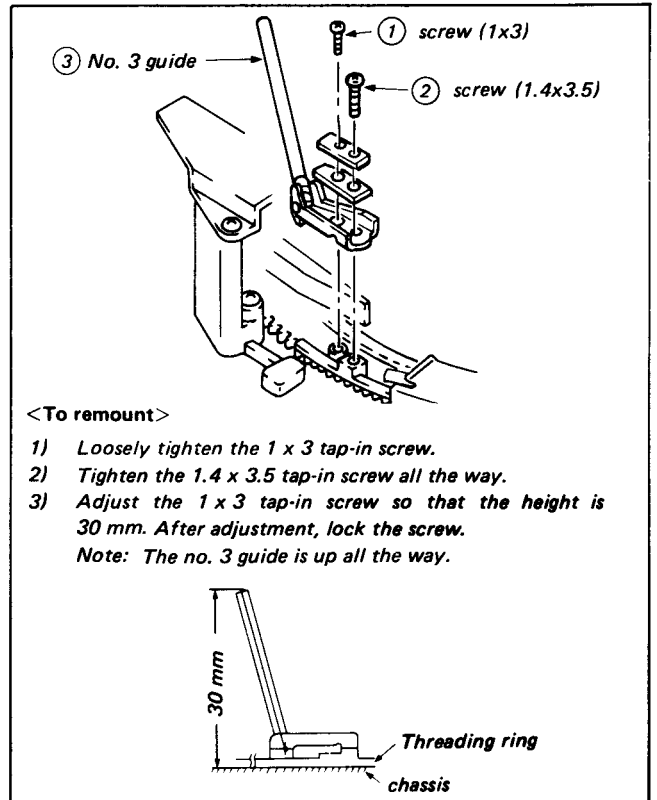


Fig. 3-25. Removal of No. 3 Guide

3-10-2. Removal of S Threading Ring (Fig. 3-23)

- 1) Remove the spring of the lock arm assembly. (Refer to Paragraph 3-15-1, Fig. 3-34)
- 2) Remove stop washers ① and ring rollers ②, ③.
- 3) Remove the UTE switch subassembly. (Refer to Paragraph 3-15-2, Fig. 3-38)
- 4) Unscrew screw ④ and remove the ring roller adjustment plate ⑤ and ring roller ⑥.
- 5) Remove the S threading ring ⑦.

Caution:

Do not use the same washer twice.

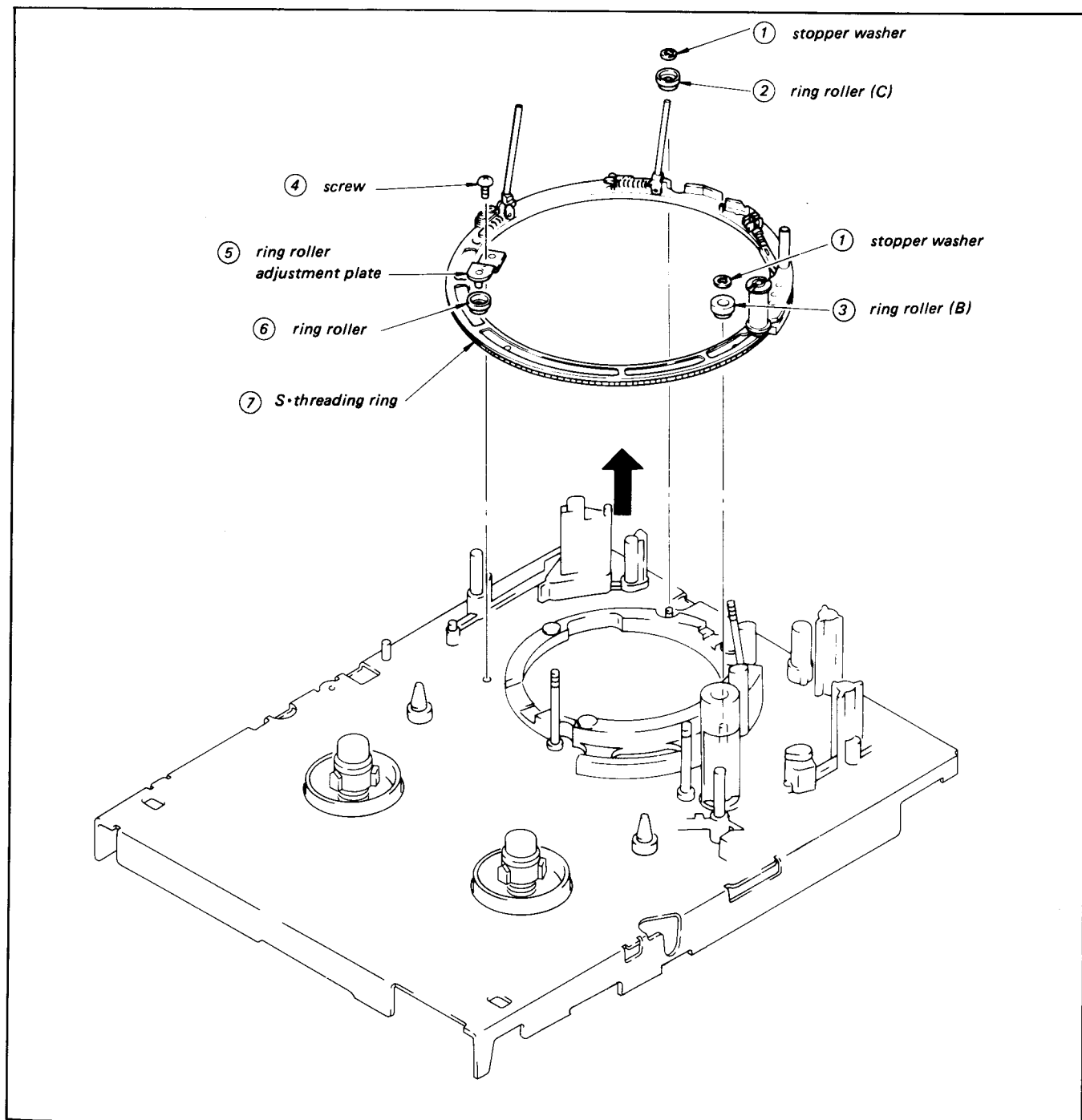


Fig. 3-23. Removing S Threading Ring

3-10-5. Checking Slider Stopper Mounting (Fig. 3-26)

- 1) Check that the drive gear is engaged.
- 2) Loosen screw ①, insert a spacer ($t = 0.2$) between the slider gear and slider stopper, then tighten screw ① while pushing in the directions of arrows ④ and ⑤

Caution:

Make sure to push it in direction ④ to eliminate any play. The slider stopper rotates in the direction of arrow ③ when screw ① is tightened. Therefore, tighten the screw while holding it with a blade-tip screwdriver.

3-10-6. Replacement of S Threading Ring (Fig. 3-27)

- 1) Mount the S threading ring.
- 2) Set the slider gear assembly in the unthreading complete position.
(Insert a 0.5 mm spacer between the slider stopper and slider gear as shown in Section ④.)
- 3) Rotate the S threading ring in the direction of the arrow ④ and align the mechanism chassis hole ($\phi 3$) and S threading ring hole ($\phi 1.5$) of the section ⑤.
- 4) Mesh the drive gear assembly with the S threading ring gear and fit them into the mechanism chassis.
- 5) Reassemble after repositioning the gearing of the drive gear assembly and S threading ring gear if the hole positions do not match.

Note:

Adjust the ACE assembly in accordance with Section 4 for tape path adjustment after changing and mounting the S threading ring.

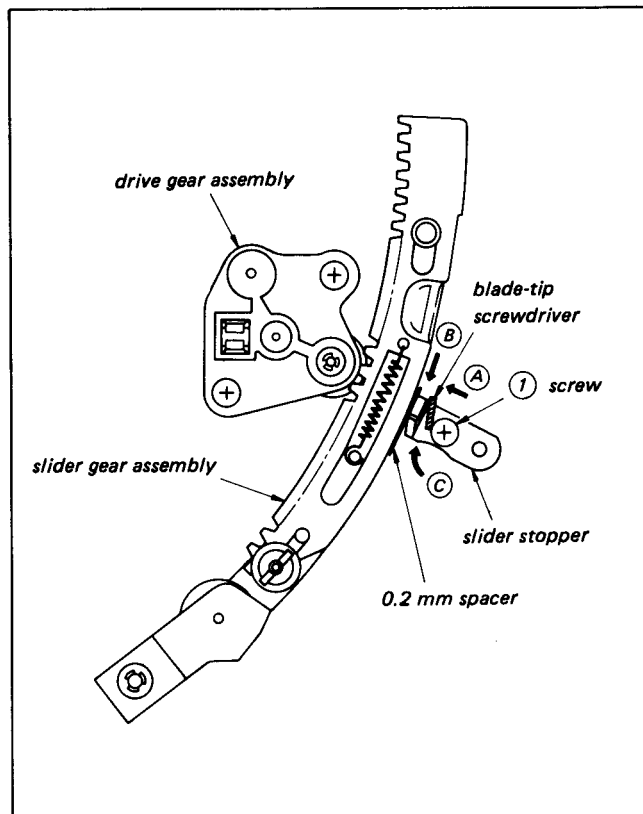


Fig. 3-26. Mounting Slider Stopper

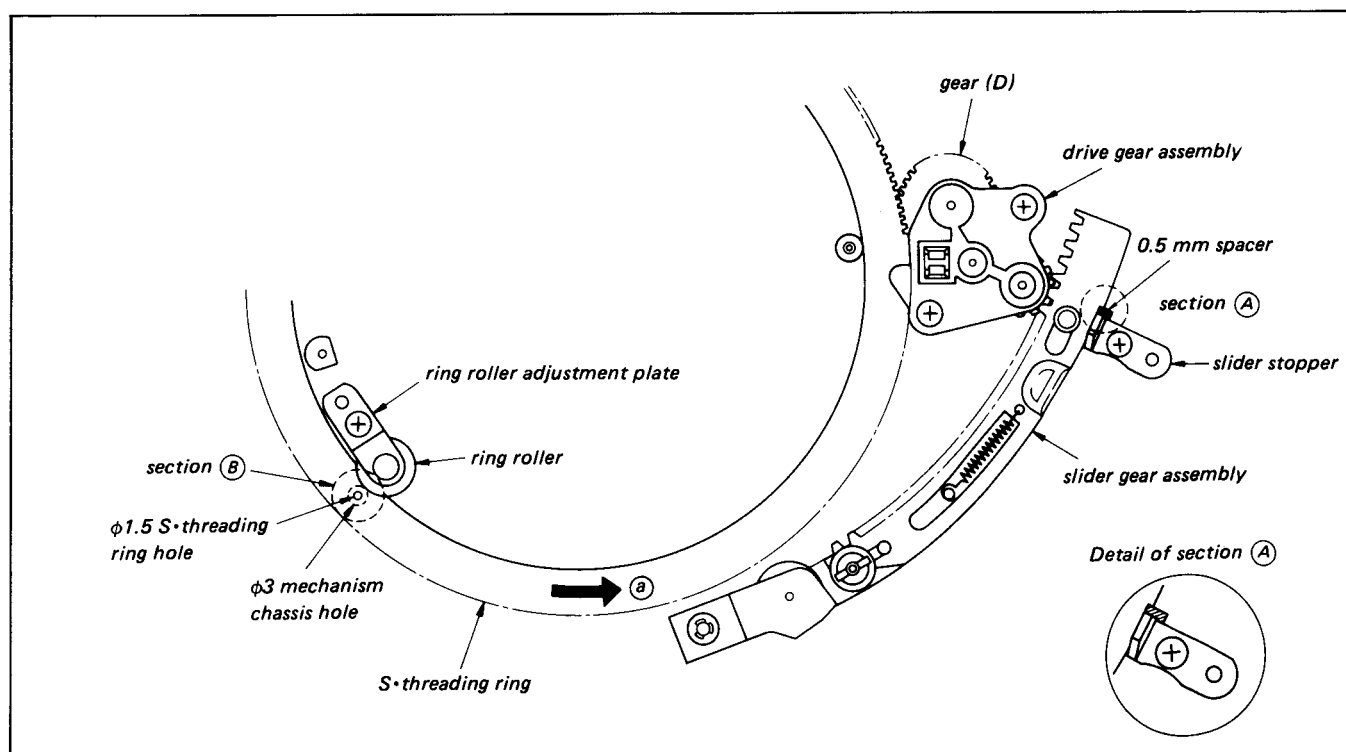


Fig. 3-27. S threading Ring Position Adjustment

3-11. CHECK AND ADJUSTMENT OF PINCH PRESS LIMITER CLEARANCE

[Check Procedure]

- 1) Set up a threading completed state.
- 2) Check that the clearance "t" of the pinch press limiter in Fig. 3-28 is 0.4 — 0.6 mm. If not, adjust as follows:

[Adjustment Procedure]

- 1) Loosen screw ① in Fig. 3-28 with the pinch solenoid held in.
- 2) Move the pinch limiter adjust plate (shaded in the diagram) fully in the direction of arrow (a). The clearance "t" at this time is 0.
- 3) Push the pinch limiter adjust plate in the direction of arrow (b) as shown at section (A) using a blade-tip screwdriver, until the clearance "t" is 0.4 — 0.6 mm.
(Use $\phi 0.4$ and $\phi 0.6$ gauges for clearance adjustment)
- 4) Tighten screw ① and lock it.

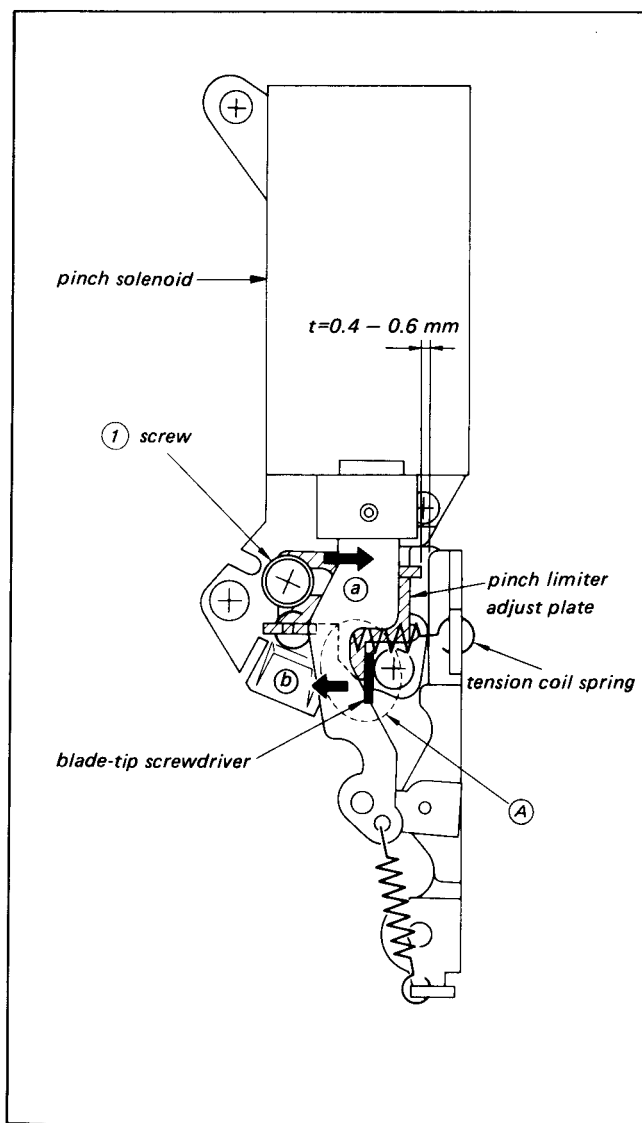


Fig. 3-28. Pinch Press Limiter Clearance Adjustment

3-12. BRAKE PLUNGER POSITION ADJUSTMENT

- 1) Loosen the screw ① securing the brake plunger.
- 2) Adjust the installation position so that the suction stroke of the brake plunger becomes 2 mm.

When the plunger is in the sucked state, S brake should be separated from S reel table.

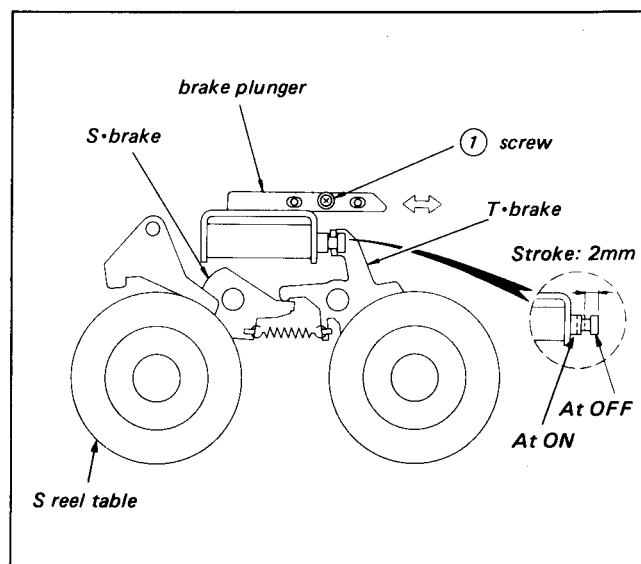


Fig. 3-29. Brake Plunger Position Adjustment

3-13. SOFT BRAKE ADJUSTMENT

[Adjustment Method]

- 1) Place a tension gauge (SL-0011) on the S reel base and hook a sector type gauge as shown in Fig. 3-30.
- 2) Adjust by moving the tension coil spring ① in the direction of the arrow (A) until the sector type gauge reading is 8 g when the FF mode is set up. (See Fig. 3-31)

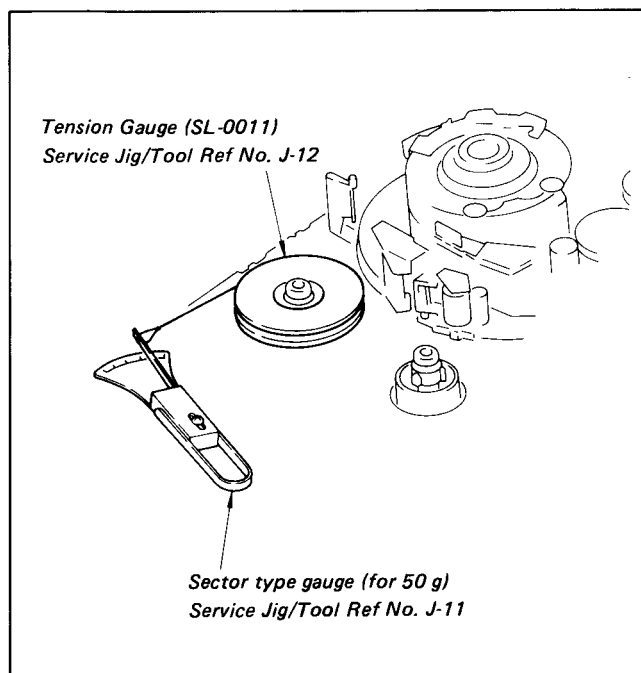


Fig. 3-30. Soft Brake Adjustment-1

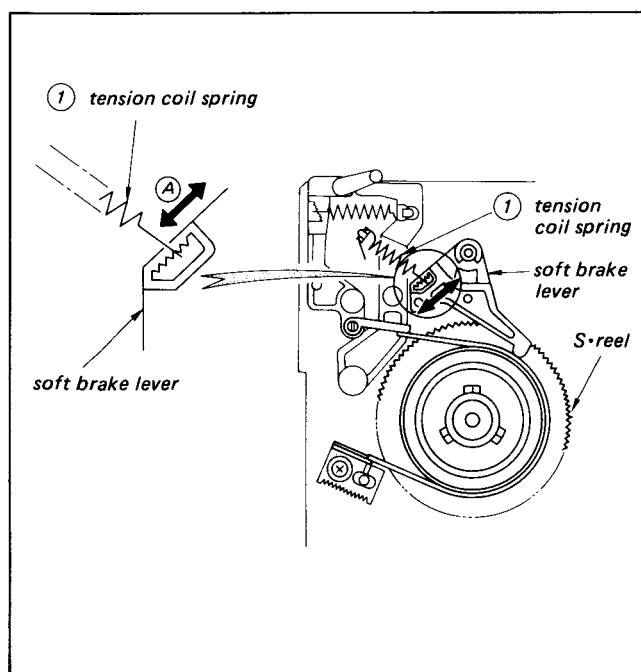


Fig. 3-31. Soft Brake Adjustment-2

3-14. TENSION REGULATOR LEVER POSITION ADJUSTMENT

[Adjustment Method]

- 1) Set up the PLAY Mode.
- 2) Loosen the screw ③ and adjust by moving the tension regulator band assembly ④ in the direction of the arrow (A) until the tape guide pin (No. 1 guide) of the tension regulator lever assembly ① is positioned inside the outer circumference of the shuttle guide (2) ② as shown in Fig. 3-32.
- 3) After making the adjustment, tighten the screw ③ carefully in order not to move the tension regulator band assembly ④.

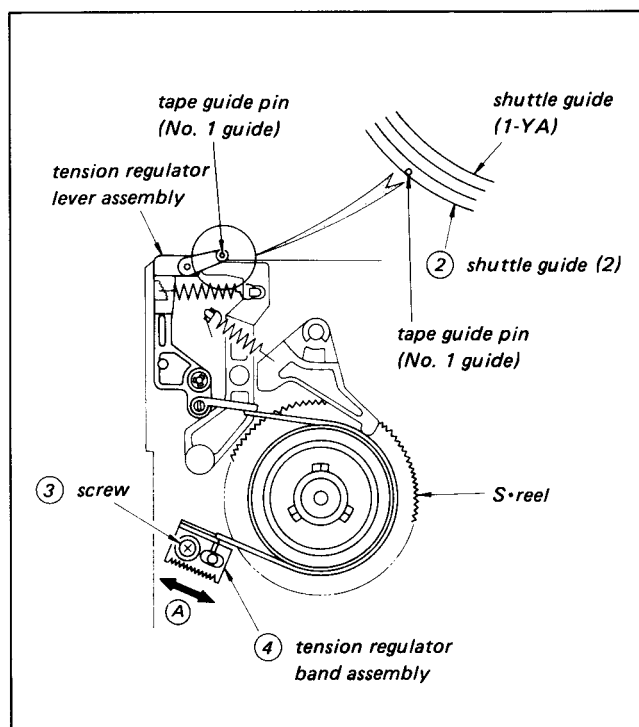


Fig. 3-32. Tension Regulator Lever Position Adjustment

3-15. CHECK AND ADJUSTMENT OF MICROSWITCH POSITION

3-15-1. Check and Adjustment of Threading End Switch (TE Switch) Position

[Check Procedure] (Fig. 3-33)

Rotate the S threading ring by hand and check that the TE switch turns on and off with a clicking noise while the lock roller is moving within the upper 2/3 of the straight portion ℓ of the recess (A) in Fig. 3-33 on the ring. If not, adjust as follows.

[Adjustment Procedure]

- 1) Adjust the lock roller to the position caving from the notch rim tip on the S threading ring, rotate the cam shaft using a blade-tip screwdriver in the direction of the arrow, and secure the cam shaft when the TE switch is turned on (a click tone is audible).
- 2) Check the results of the adjustment following the check procedure above.

[Removal] (Fig. 3-34)

- 1) Unhook the tension coil spring from the lock arm assembly.
- 2) Unscrew screw (1) and remove the TE switch subassembly.
- 3) Push the hook on the main chassis assembly in the direction of the arrow to unhook, and remove the lock arm assembly.

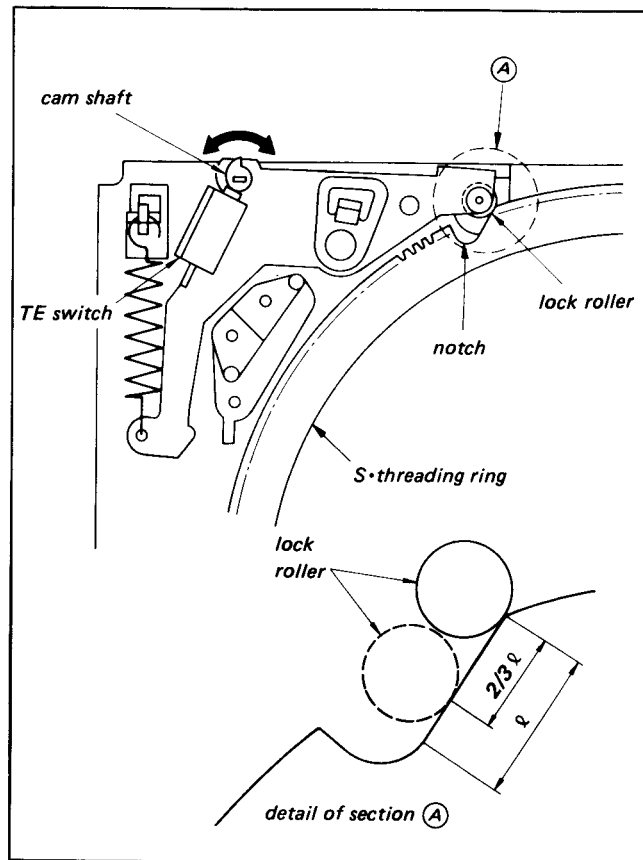


Fig. 3-33. TE Switch Position Adjustment

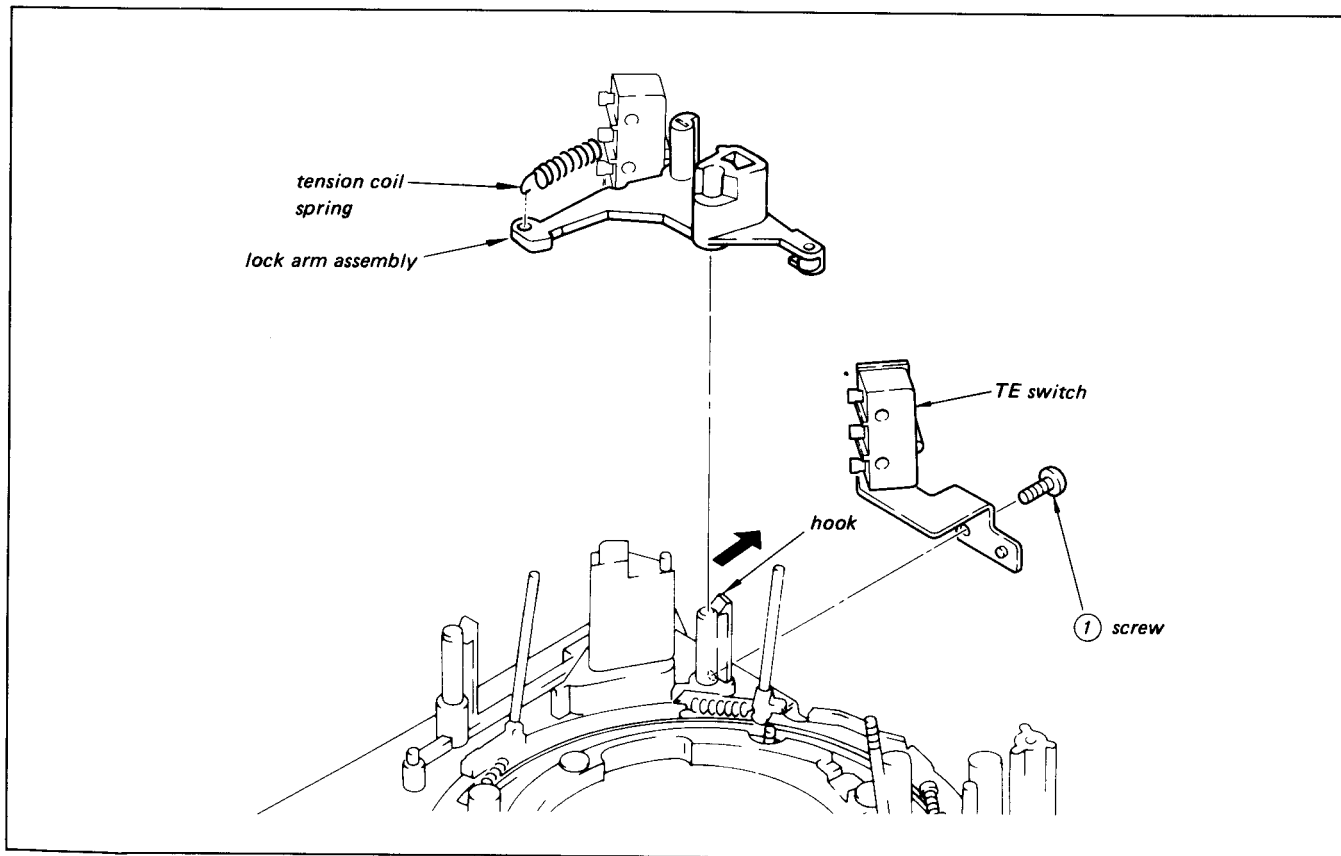


Fig. 3-34. Removing TE Switch and Lock Arm Assembly

3-15-2. Check and Adjustment of Unthreading End Switch (UTE Switch) Position

[Check Procedure]

Rotate the S threading ring by hand. Verify that the switch trips when a pin of $\phi 1.2$ is inserted at section (A) in Fig. 3-35 after the UTE switch arm roller assembly has dripped into the UTE switch cam groove. Verify that the switch does not trip when a pin of $\phi 0.6$ is inserted.

[Adjustment Procedure]

- 1) If the switch does not trip when the $\phi 1.2$ pin is inserted, loosen small screw ① and adjust by moving in the direction of the arrow little by little.
- 2) The switch actuator is bent as shown in Fig. 3-36 when the switch turns on after inserting a $\phi 0.6$ pin. Check the adjustment.

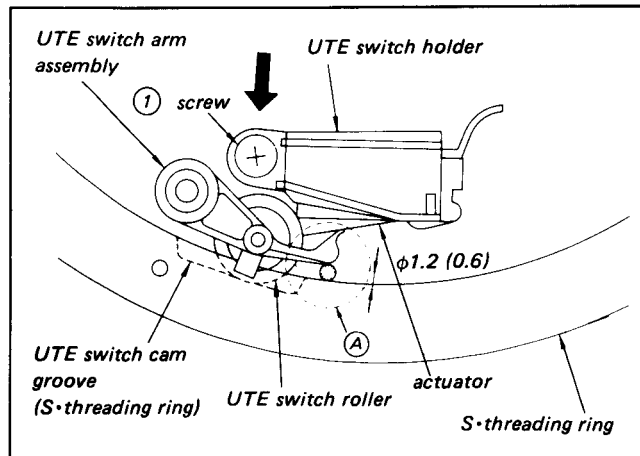


Fig. 3-35. UTE Switch Position Adjustment

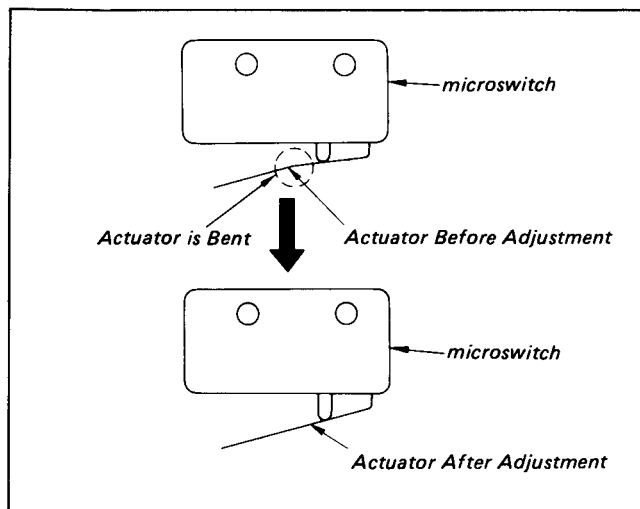


Fig. 3-36. Actuator Adjustment

Caution:

Insert the $\phi 1.2$ and 0.6 pins into their correct positions as shown in Fig. 3-37. (Even when the clearance at the entrance is 1.2 mm on construction, depending on the pin insertion positions as shown in Fig. 3-37, the clearance inside is less than 1.2 mm).

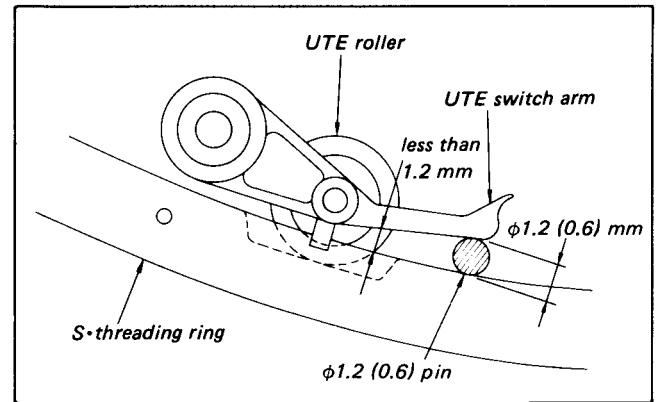


Fig. 3-37. Pin Position During Checking

[Removal]

- 1) Unscrew screw ① as shown in Fig. 3-38.
- 2) Release the switch hook ② from the chassis and remove the switch body while pushing the actuator to the "ON" position.

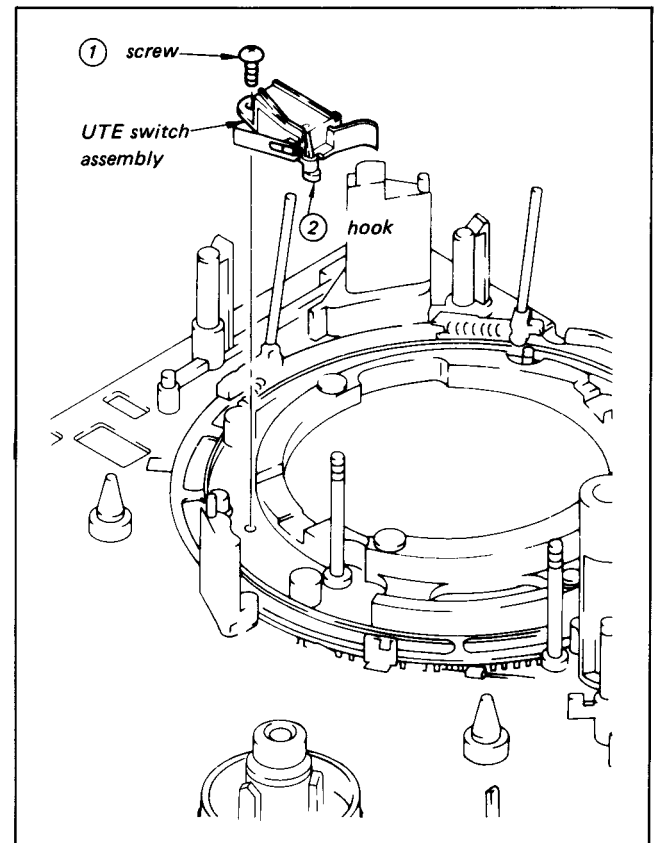


Fig. 3-38. Removing UTE Switch

3-16. FORWARD/BACK TENSION MEASUREMENT

Perform this measurement using torque cassette SL-0003C according to the procedure below.

[Procedure]

- 1) Remove the upper panel so that the tape path is visible.
- 2) Insert the torque cassette and set **PLAY** mode.
- 3) Read the S reel side meter after the indicator has made about one revolution.

Specified Value $30 \pm 5 \text{ g} \cdot \text{cm}$

Note:

- i) Be sure the set is level when measuring.
- ii) After measuring, the tape may go slack if the **STOP** button is pressed, so put the set into forward mode first, to remove the slack, then the tape can be ejected.

[Adjustment]

Adjust the position of the tension coil spring on the tension regulator lever assembly in the direction of the arrow (A) so that measured values become $30 \pm 5 \text{ g} \cdot \text{cm}$ to conform to the standard.

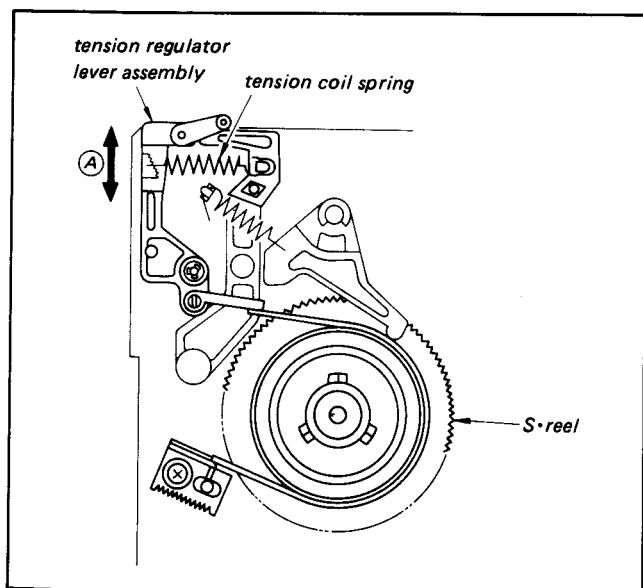


Fig. 3-39. Back Tension Measurement

3-17. FORWARD TORQUE ADJUSTMENT

Perform this measurement using torque cassette SL-0003C according to the procedure below.

[Procedure]

- 1) Insert the torque cassette and set **RECORD** mode.
- 2) Adjust RV309 of SS-16 board so that the reading of the take-up side becomes $80 \pm 5 \text{ g} \cdot \text{cm}$.

Note:

Upon **RECORD** mode, auto shutoff may occur, entering **STOP** mode. This is due to the construction of the torque cassette (the action of the built-in spring). The spring acts when the take-up reel table stops momentarily. In this case, either readjust by pushing the **REC** button, or adjust as follows.

1. Unplug connectors CN310 and 311 from SS-16 board.
2. Connect pin (39) of IC301 (TP-402) and pin (2) of CN 310 with a 47 kohm resistor.
3. Adjust.

SECTION 4

TAPE PATH ADJUSTMENT

4-1. TRACKING ADJUSTMENT

This adjustment has significant effect on picture quality in each mode and tape interchangeability, so please perform it very carefully.

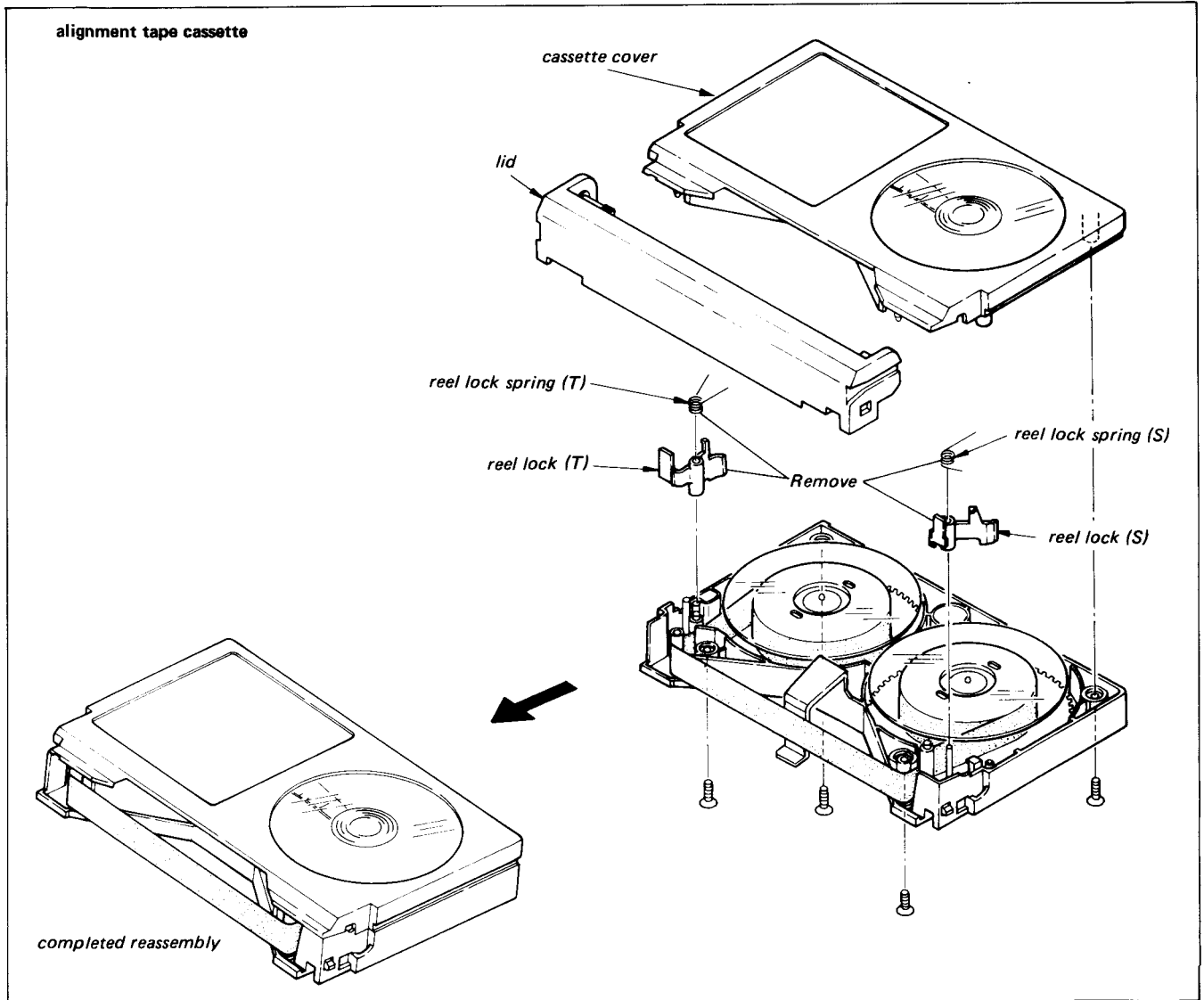


Fig. 4-1. Cassette Holder Remodeling

4-1-1. Preparation

- 1) When modifying alignment tape KR5-2H, use caution not to dislodge the tape reels from their correct position. Refer to Fig. 4-1 and remove the four screws that secure the upper cover to the lower cover.
Remove the upper cover and lid. Separate the lid and lid tension spring from the upper cover. Remove the two reel lock springs (T and S) and the two reel locks (T and S). Remount only the upper cover, being certain that it is properly mated with the lower cover. Secure the covers with four screws. **NOTE** — If the reel locks, and related springs are not removed from the cassette, the tape will load but will not thread. In this case the cassette will be ejected from the VCR approximately eight seconds after being loaded into the VCR.
- 2) Clean the tape contact surfaces (tape guides, drum, capstan shaft, pinch roller, ACE FE head surface) with chamois dampened with methanol.
- 3) Oscilloscope connections:
1ch: CN2-5 pin (RY-1 board)
2ch: CN2-3 pin (RY-1 board)
- 4) Play back the tracking portion of the modified KR5-2H alignment tape.
- 5) Confirm that the RF output waveform is flat, with maximum amplitude. (The waveform should increase and decrease, remaining flat, when the tracking control knob is turned back and forth.) Also, when the waveform is maximum, confirm that the RF output waveform variation and contact satisfy the specifications shown in Fig. 4-2. If they do not, follow the instructions in 6).
- 6) If the tracking control knob is turned and the entrance waveform does not flatten as shown in Fig. 4-3(a), perform the entrance side adjustment in 4-1-2. If the exit waveform does not flatten as shown in Fig. 4-3(b), perform the exit side adjustment in 4-1-3.

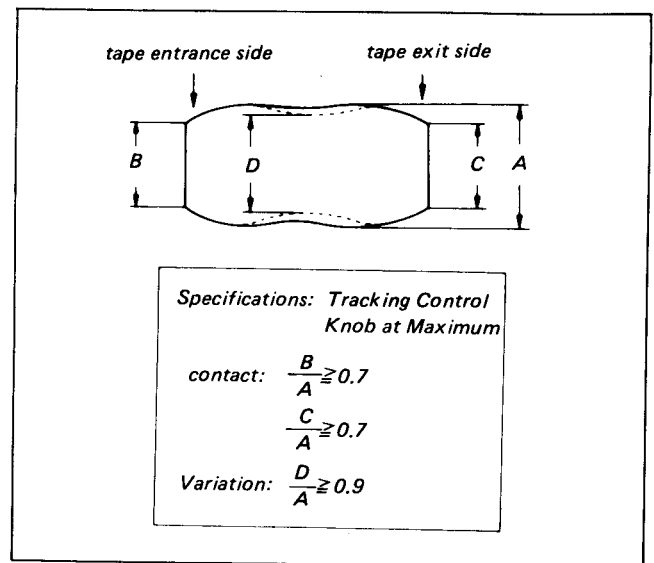
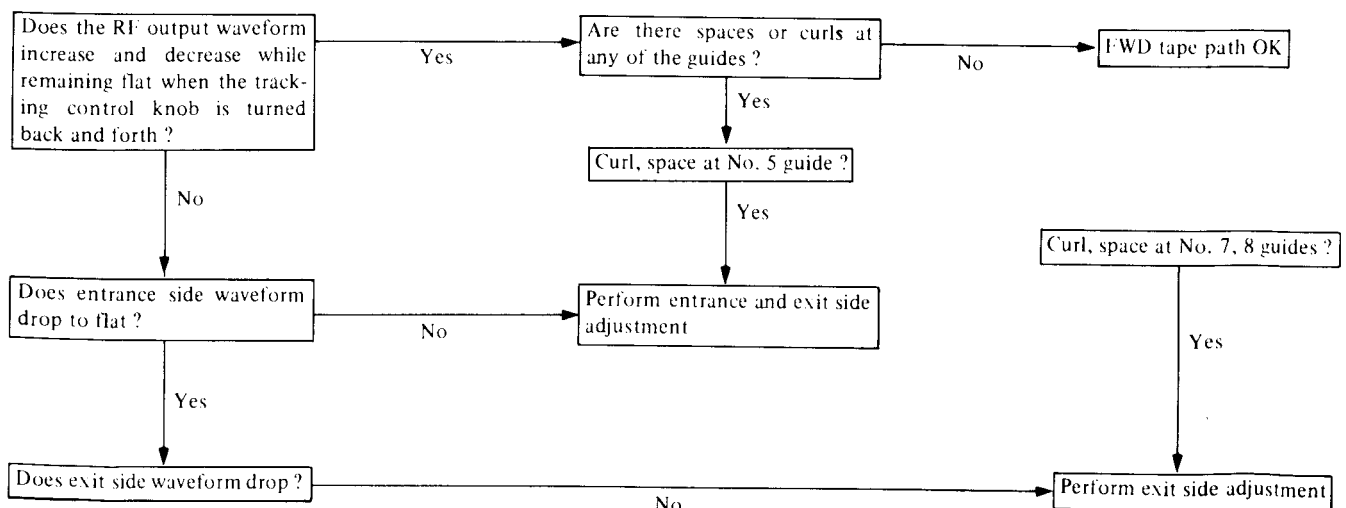


Fig. 4-2.

	BOARD	CONNECTOR & PIN NO.
RF Output Waveform	RY-1	CN2-5
External Trigger	RY-1	CN2-3
Audio Out	YC-25	AUDIO OUT CH1, CH2
Video Out	YC-25	VIDEO OUT

Waveform Confirmation



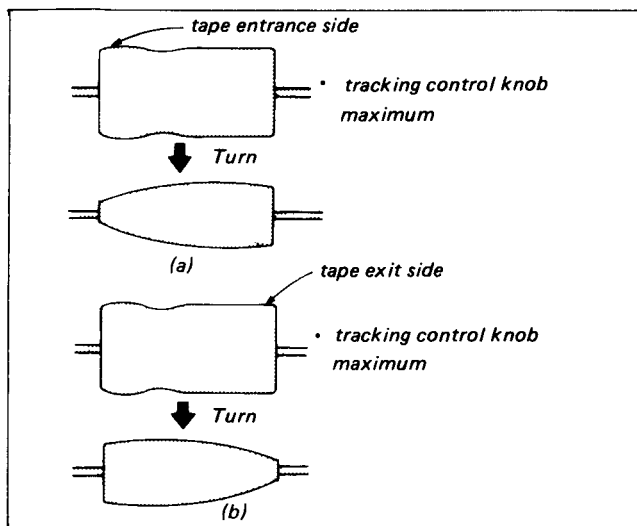


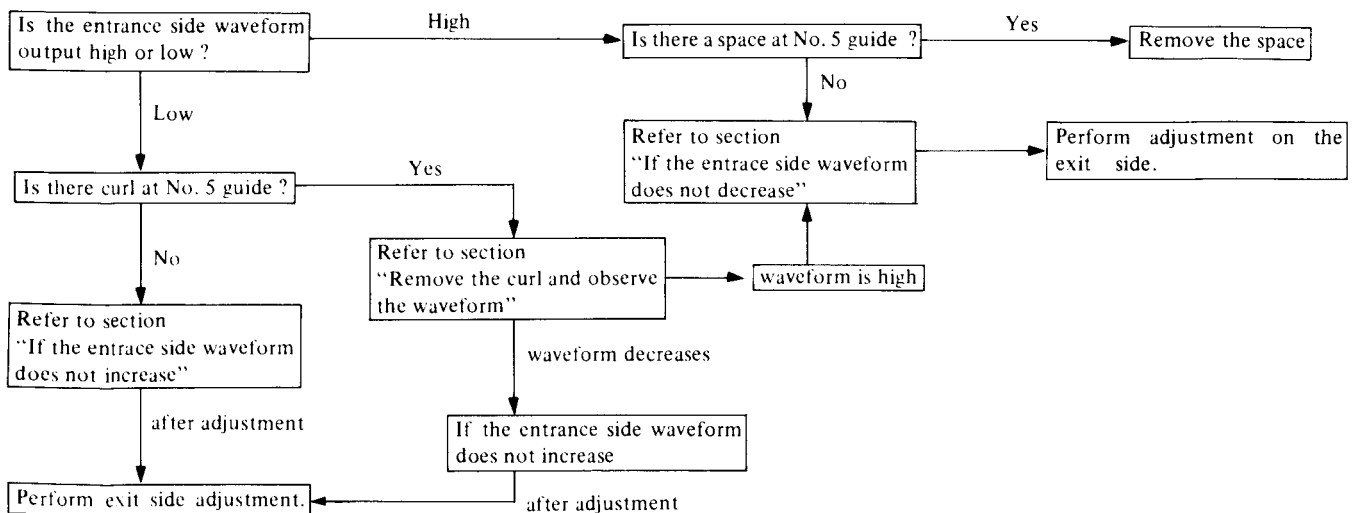
Fig. 4-3.

Note: After the indicated tape path adjustments that follow have been successfully completed using normal playback speed, operate the VCR in the Speed Search mode and look for curl at the tape guides. Readjust them if necessary. Then, finally, playback a regulator L830 tape as a check-up. See Section 4-4.

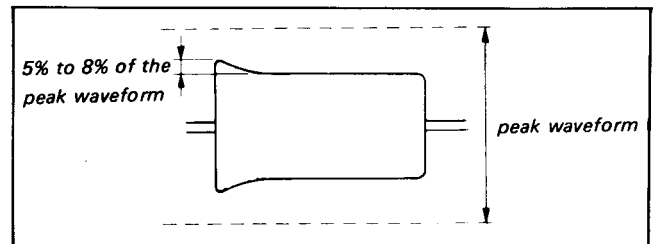
4-1-2. Entrance Side Adjustment

Always perform the exit side adjustment as well as the entrance side adjustment. Fig. 4-4 illustrates the guides and adjustment locations.

Entrance Side Flow Chart



- 1) Turn tracking control knob counterclockwise to drop RF output waveform to about 60% of maximum.
- 2) Turn No. 6 guide counterclockwise to free tape transportation to the drum. Use a special notched screwdriver. (See Section 1-8, Tools And Fixtures Required)
- 3) Loosen No. 5 guide lock screw ①, turn No. 5 guide so that the entrance side waveform is almost flat, as shown in the figure below, and tighten lock screw ①. (See Fig. 4-5)



Note:

Be sure that the waveform remains as shown in the figure after tightening the lock screw ①.

- 4) Next lower No. 6 guide and flatten the waveform.
- 5) Push the tape down between No. 4 and No. 5 guides by hand, and confirm that the entrance side RF waveform returns to the original state after being lowered. If the waveform is not as illustrated, or if the waveform does not flatten, or takes too much time to flatten after the entrance side tape is pushed down, follow the procedure below to adjust.
- 6) Check No. 5 guide for space and curl. If space or curl exists, follow the appropriate adjustment procedure.

Note:

Be sure that there is tape tension upper and lower balance between No. 3 — No. 4 — No. 5 guides. Perform No. 3 or No. 5 guide lateral adjustment if necessary.

Note:

Upon failing to obtain the waveforms shown above, press down the tape at the entrance side, adjust as indicated below when a long time is needed for the waveform to return to the horizontal, or when it does not return at all.

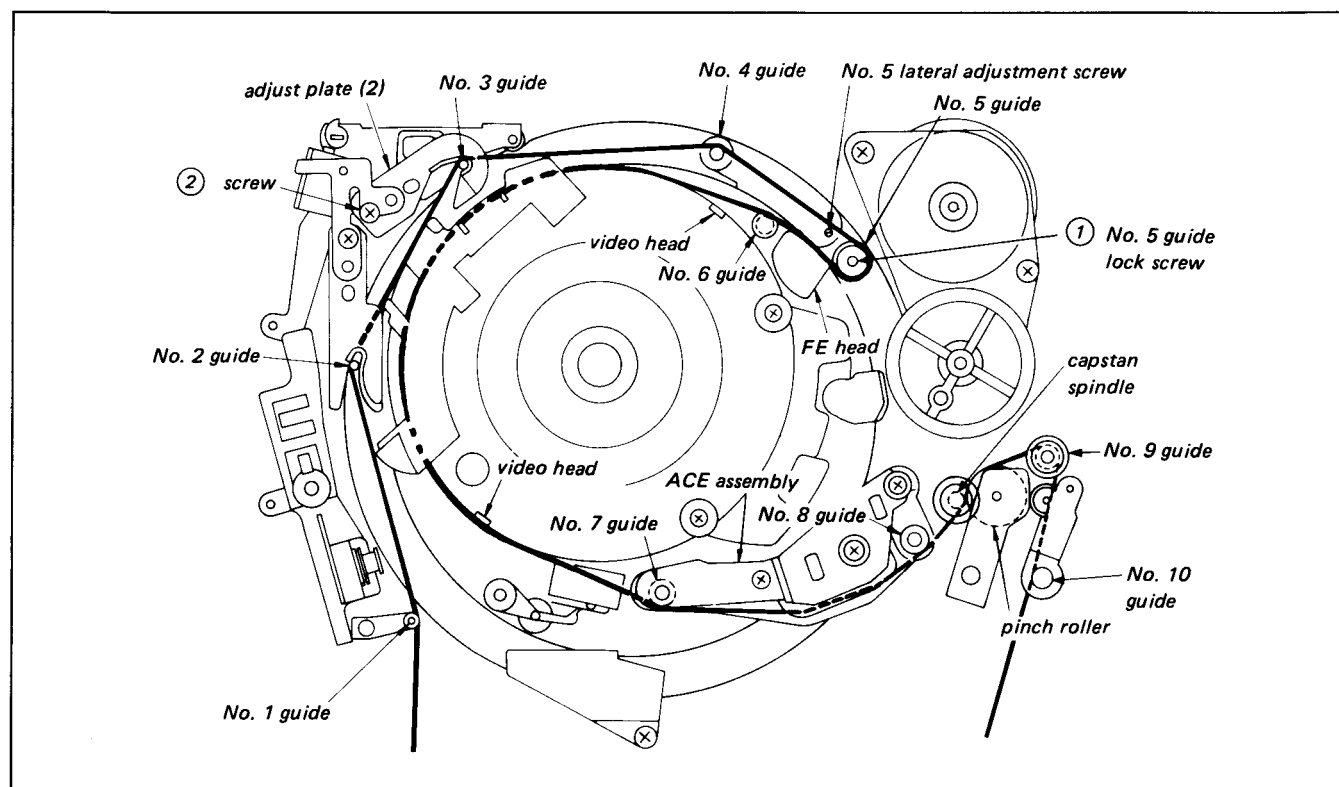


Fig. 4-4. Tape Guide Layout

[If the waveform entrance output does not increase]

- 1) Check to make sure tape upper and lower tension is equal between No. 3 — No. 4 — No. 5 guides. If it is not, perform No. 3 or No. 5 guide lateral adjustment.

Note:

Be sure there is no space at No. 4 guide lower flange.

- 2) Raise No. 4 guide lower flange to raise entrance output.

Note:

No. 4 guide lower flange may be raised 0.4 mm from its lowest position.

- 3) If the waveform does not increase in step 2), turn No. 5 lateral adjustment screw slightly (less than 360°) counterclockwise.

[If the waveform entrance output does not decrease]

- 1) Move the No. 3 guide adjust plate away from the drum, and tighten screw (2) at the point just before the lower tension of the tape loosens.
- 2) If the tape is touching No. 4 guide lower flange, lower the flange. If it is floating, adjust No. 5 guide laterally.

[If there is space at No. 5 guide]

Turn No. 4 guide counterclockwise to raise the tape and remove the space at No. 5 guide.

Note:

Be careful not to create a large space at the bottom of No. 4 guide.

[If there is curl]

- 1) When there is a space at the bottom of No. 4 guide:
Lean the adjust plate of No. 3 guide toward the outside until the point just before the lower tape tension loosens.
- 2) When there is curl but no space at the bottom of No. 4 guide:
 - i) Confirm that No. 4 guide is not raised too high. Turn clockwise to lower if necessary.
 - ii) If this does not solve the problem, tighten No. 5 guide lateral adjustment screw by turning clockwise until the curl disappears.

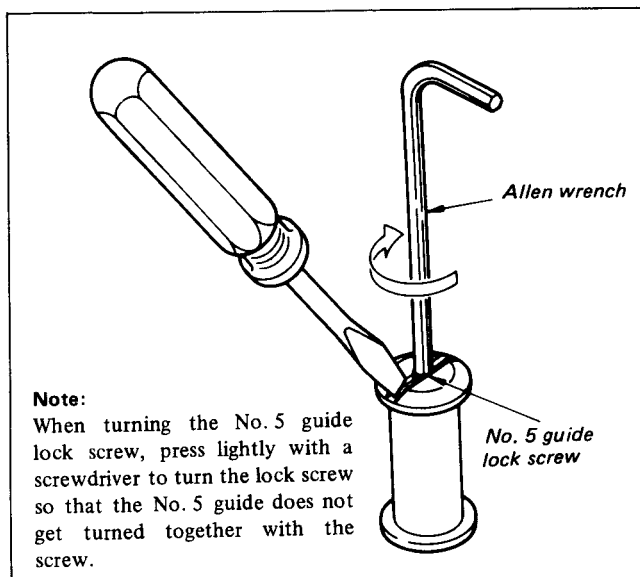


Fig. 4-5.

4-1-3. Exit Side Adjustment

- 1) Turn the tracking control knob counterclockwise to lower the RF output waveform to about 60% of the maximum.
- 2) Raise No. 7, 8 guides to free the tape transportation, and check the waveform. (This waveform is called "exit free waveform".)

Note:

Be careful not to raise the guides too much. They should be raised about 0.3 mm, and also, the tape should not touch the ACE head bottom flange. (Fig. 4-6)

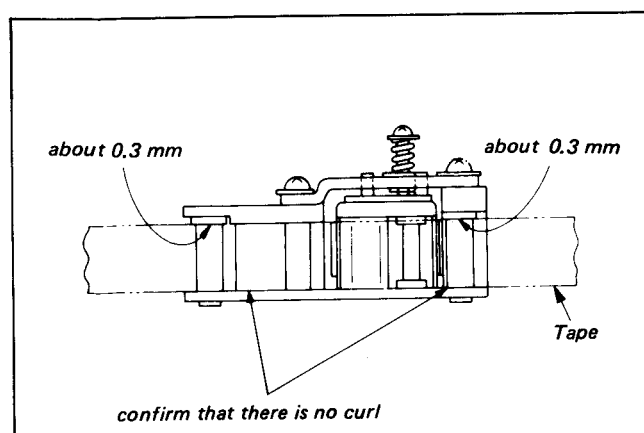


Fig. 4-6.

- i) If the exit free waveform is within the range illustrated in Fig. 4-7(a), (b), proceed with exit side adjustment.
- ii) If it is not within the specified range, follow the adjustment procedure in 4-3.

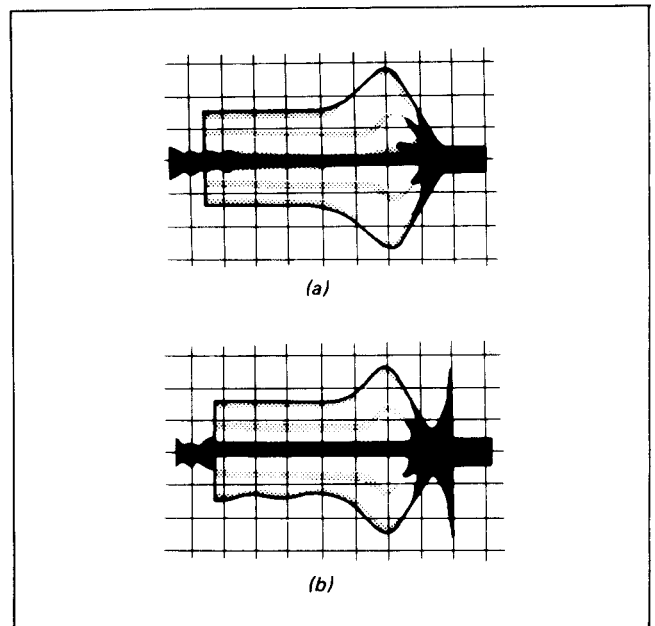


Fig. 4-7.

- 3) Flatten the waveform with No. 7 guide, and match No. 8 guide to the tape. (Lower the guide to the point just before the waveform changes, and where there is no curl.) At this time, the exit side waveform may rise slightly, so lower No. 7 guide again to flatten it, and match No. 8 guide to the tape.
- 4) Confirm that there is no curl at No. 7, 8 guides in forward mode.
- 5) Confirm that curl and space do not appear at No. 8 guide in reverse mode. If curl or space appears, adjust with No. 9 guide.

4-2. ADJUSTMENT AFTER REPLACEMENT OF THE ACE ASSEMBLY

Perform the following adjustments after removing or replacing the ACE assembly.

4-2-1. Tracking Adjustment

- 1) Position the parallel plate (Fixture, SL-0657) at shown in Fig. 4-8, and turn audio head lateral adjustment screw ① to adjust the audio head vertically.

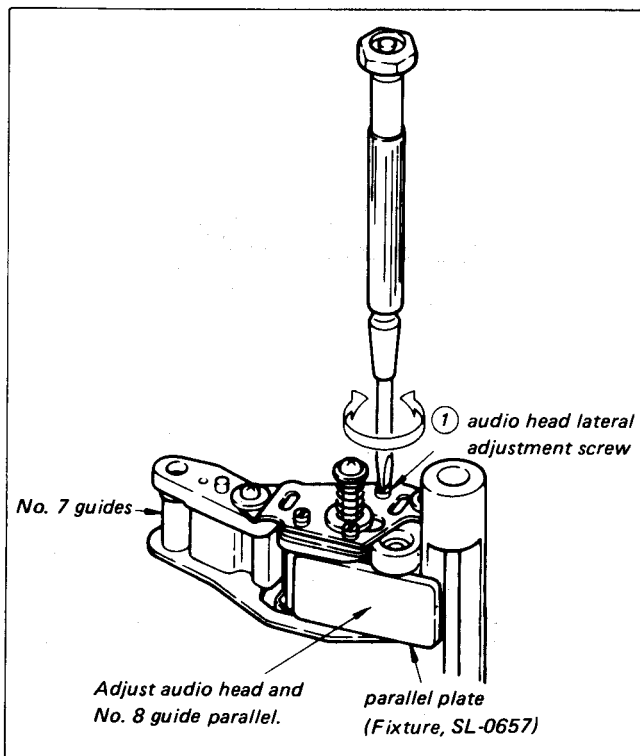


Fig. 4-8.

- 2) Turn the tracking control knob counterclockwise to lower the RF output waveform to about 60% of the maximum.
- 3) Play back the tracking portion of the alignment tape KR5-2H raise No. 7, 8 guides about 0.3 mm and check the exit free waveform of the RF output waveform.

Note:

Be sure that the tape does not touch the bottom flange of the ACE assembly.

- i) If the waveform is within the range illustrated in Fig. 4-7(a), (b), proceed with the adjustment.
- ii) If the exit free waveform appears as shown in Fig. 4-9, turn the ACE lateral adjustment screw clockwise until the waveform is within the range illustrated in Fig. 4-7(a), (b).
- iii) If the exit free waveform appears as shown in Fig. 4-10, turn the ACE lateral adjustment screw counterclockwise to obtain the waveform shown in Fig. 4-9, then turn clockwise again until the waveform is within the range shown in Fig. 4-7.

- 4) Turn the No. 7 guide to flatten the waveform, and match the No. 8 guide to the tape. (Lower the guide until the point just before curl appears at No. 8 guide flange.)
- 5) If the RF output waveform is as shown in Fig. 4-9, where the exit side is not flat, lower No. 7, No. 8 guides again to flatten it.

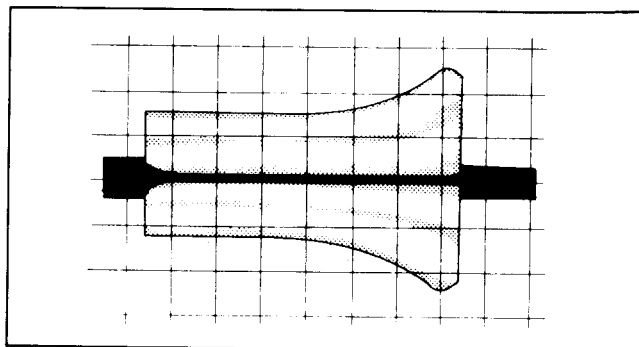


Fig. 4-9.

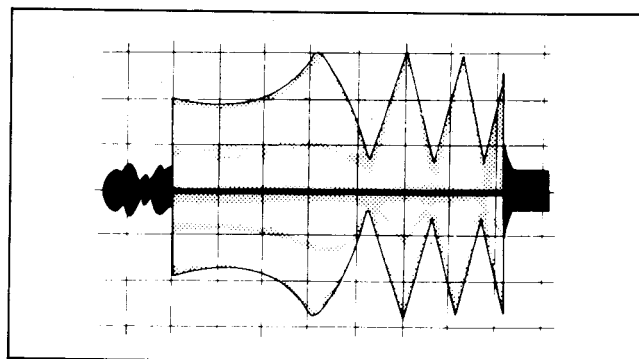


Fig. 4-10.

4-2-2. Audio head (ACE assembly) azimuth adjustment

Audio head azimuth affects phase difference of the right and left channels in stereo. Since the track width is one third of monaural, azimuth loss is small when azimuth error is the same. Therefore, only phase adjustment of the two channels is to be performed as azimuth adjustment.

Mode: playback
Signal: alignment tape, color bars, 3 kHz
Oscilloscope: CH-1 AUDIO OUT CH1/L terminal
CH-2 AUDIO OUT CH2/R terminal

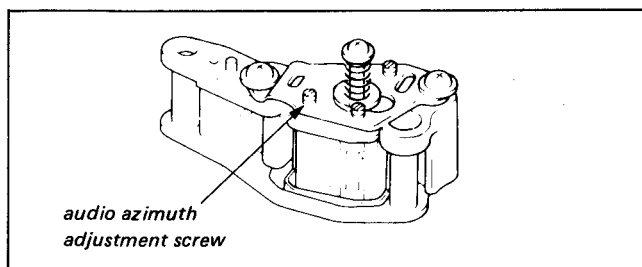
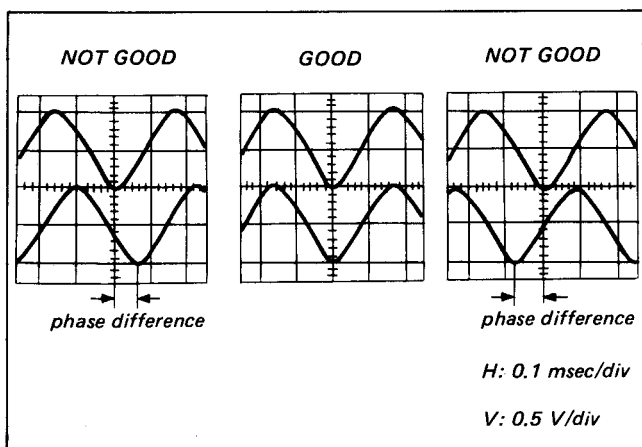


Fig. 4-11.

[Adjustment procedures]

1. In dual-beam mode

- 1) Zero the phase difference of CH-1 and CH-2 signals with the azimuth adjusting screw.



- 2) Requirement on phase difference angle: less than 45°

2. In X-Y mode with Lissajous' figures

- 1) Zero the phase difference of CH-1 and CH-2 signals with the azimuth adjusting screw.

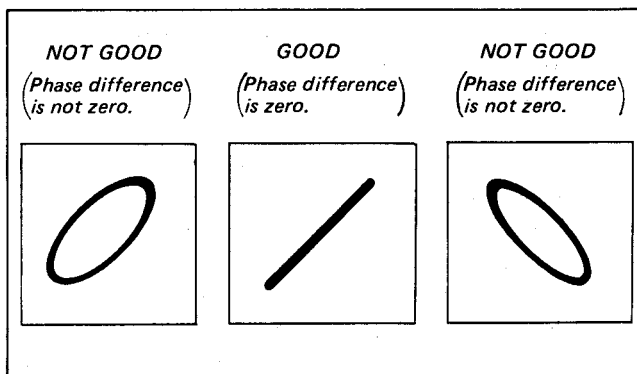


Fig. 4-12.

- 2) Requirement on phase difference angle: less than 45°

The angle of phase difference is given by $\sin^{-1}(B/A)$. To meet that the angle of phase difference be less than 45° , it is sufficient that $B/A < 0.7$.

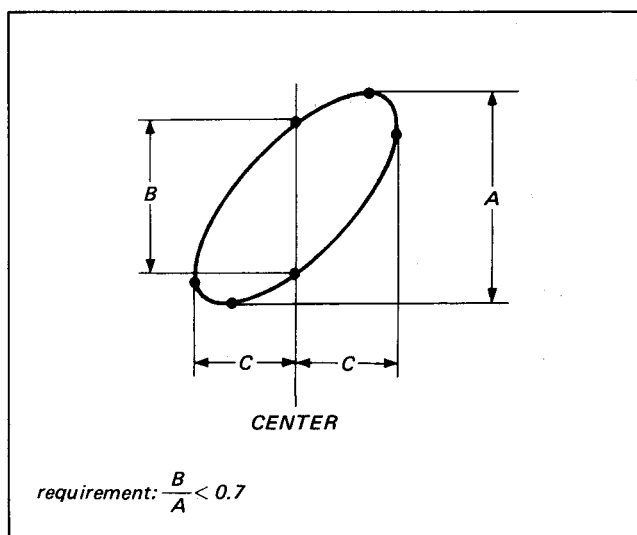


Fig. 4-13.

4-2-3. CTL Head (ACE Assembly) Position Adjustment

This adjustment is both mechanical and electric: mechanically, it is the adjustment of the CTL head position, and electrically, it is the tracking control center adjustment. The procedure involves performing the electrical adjustment first, then the head position adjustment.

- 1) Connect the oscilloscope as follows:
 1ch: CN2 5 pin (RY-1 board)
 2ch: AUDIO OUT CH1 or CH2 (YC-25 board)
 External trigger: CN2 3 pin (RY-1 board)
 - 2) Play back the tracking portion of the alignment tape.
 - 3) Turn the tracking control knob back and forth, and confirm that the output waveform level is maximum at the center click position, and that the 0 level of the audio signal is at the point where the RF output waveform Bch waveform appears, as shown in Fig. 4-14.
- If adjustment is necessary, proceed as follows.

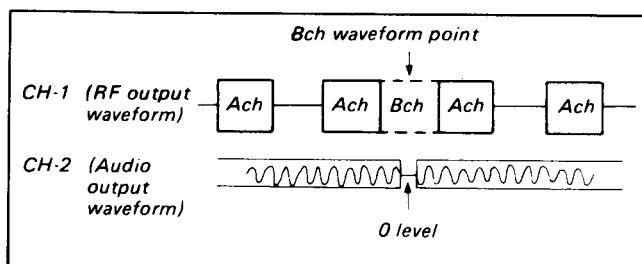


Fig. 4-14.

- 4) Tracking Control Center Adjustment
- 5) CTL Head Position Adjustment
 Set the tracking control knob at the center detent position and loosen the two ACE assembly position adjustment screws ①. As shown in Fig. 4-15 slide the ACE assembly with a screwdriver until it is in the position shown in Fig. 4-14 and the RF output waveform is maximum. Tighten the screws ① when this position is obtained.
- 6) Replay the color bars of the alignment tape and check the picture quality.

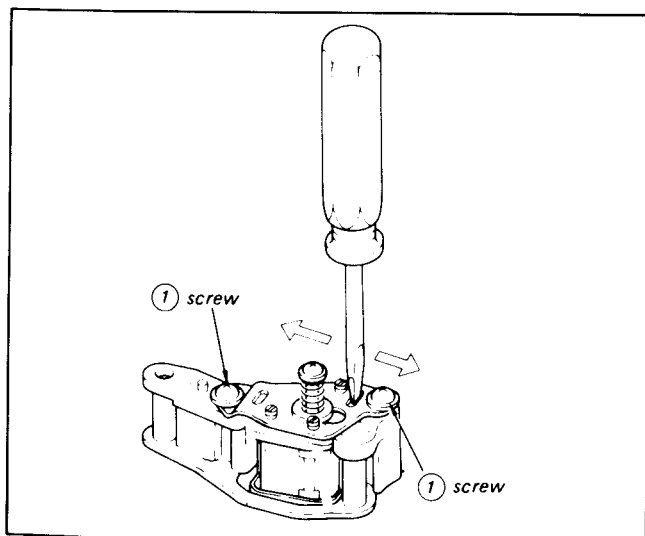


Fig. 4-15.

4-2-4. Height Adjustment of Audio Head (In ACE Assembly)

- The core is placed in position with respect to the tape guide flange while the ACE assembly is being built. Height adjustment is thus unnecessary during replacement except that the difference in signal levels between 2 channels is so remarkable that the difference cannot be corrected by adjusting the circuit parameters.
 - Set the BNR switch at OFF and then start adjustment.
- 1) Perform the exit side tracking adjustment.
 - 2) Perform azimuth adjustment for the audio head (ACE assembly).
 - 3) Mark the currently set positions for the audio-head height adjusting screw and the lateral adjusting screw shown in Fig. 4-16, and the azimuth adjusting screw shown in Fig. 4-11.

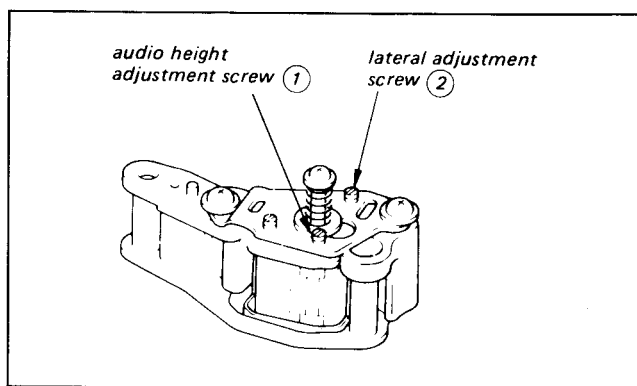


Fig. 4-16.

- 4) Turn both the audio-head height adjusting screw and lateral adjusting screw at right angle counterclockwise.

Note:

Turn them in excess of the right angle counterclockwise and return them at right angle.

- 5) Turn the azimuth adjusting screw at right angle counterclockwise.
- 6) Set the output signal in channel 1 (AUDIO OUT CH1 on the YC-25 board) at -30 dB by adjusting RV501 (PB LEVEL CH1) on the AM-4 board, playing back the 333 Hz section of alignment tape KR5-2H.
- 7) Turn both the audio-head height adjusting screw and head tilt adjusting screw at 180 degrees clockwise (which are turned by 90 degrees from the marked position clockwise). Turn the azimuth adjusting screw at 180 degrees counterclockwise (which is turned by 90 degrees from the marked position counterclockwise).

Note:

Loosen the screws in accordance with the procedure of item 4).

- 8) Set the output signal in channel 2 (AUDIO OUT CH2 on the YC-25 board) at -30 dB by adjusting RV601 (PB LEVEL CH2) on the AM-4 board, playing back the 333 Hz section of alignment tape KR5-2H.

- 9) Return the screws at the marks for 3 types of screws.
- 10) Perform azimuth adjustment of the audio head (in the ACE assembly).
- 11) Confirm that the difference in signal levels between 2 channels is 2 dB or less, playing back the tracking section of alignment tape KR5-2H.

If the difference in signal levels between 2 channels is greater than 2 dB, perform adjustment in accordance with the following procedures.

- i) When the signal level in channel 2 is greater than that in channel 1;
Turn the audio-head height adjusting screw, lateral adjusting screw, and azimuth adjusting screw by the same angle counterclockwise until the difference in signal levels becomes 1.5 dB or less.

Note:

Turn the respective screws at 30 degrees and check if the difference in signal levels becomes 1.5 dB or less. If the difference in signal levels approaches 1.5 dB, perform fine adjustment by turning the screws clockwise. Do not turn the screws counterclockwise when the screws are finally set during fine adjustment.

- ii) When the signal level in channel 2 is smaller than that in channel 1;
Perform adjustment in the same way as step i), except that the screws are to be turned in the reverse direction to step i).
- iii) Perform azimuth adjustment of the audio-head (ACE assembly) after completion of step i) or ii).

4-3. ADJUSTMENT AFTER REPLACEMENT OF THE CAPSTAN MOTOR

- 1) Perform the vertical adjustment of the capstan shaft according to 3-4. Replacement and Adjustment of Capstan Motor.
- 2) Play back the tracking portion of the alignment tape.
Connect the oscilloscope as follows:
1ch: CN2.....5 pin (RY-1 board)
2ch: CN2.....3 pin (RY-1 board)
- 3) Turn the tracking control knob clockwise to lower the RF output waveform to about 60% of the maximum.
- 4) Raise No. 7, 8 guides a little, and check the exit free waveform.
i) If the exit free waveform is within the range indicated in Fig. 4-17(a), (b), proceed from step 5).

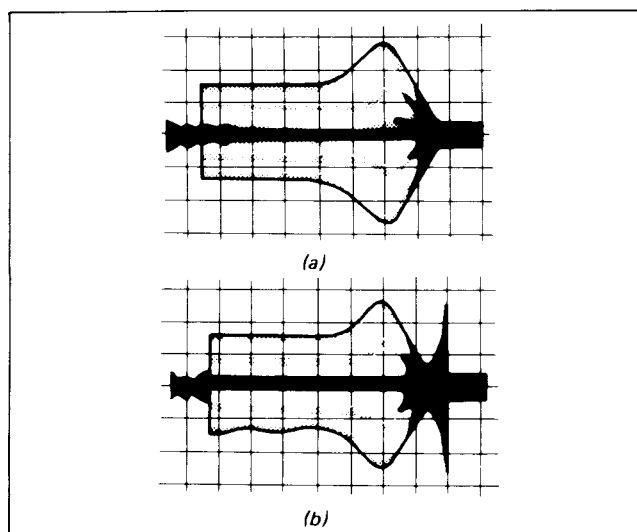


Fig. 4-17.

- ii) If the peak of the exit free waveform is smaller than that illustrated in Fig. 4-17(a) (e.g. Fig. 4-18), loosen the lock screw, then turn the capstan adjustment screw until the waveform is within the specified range.

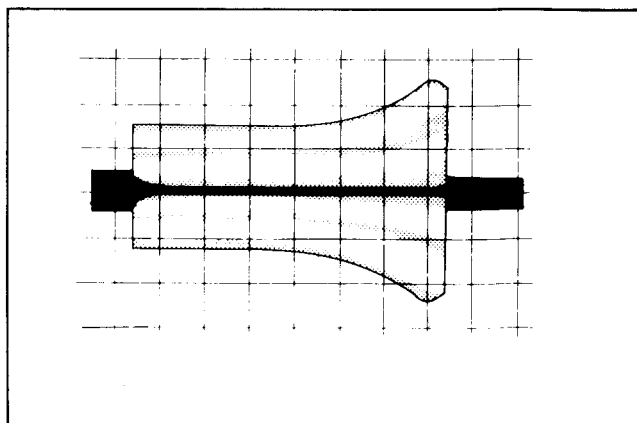


Fig. 4-18.

- iii) If the peak shape of the exit free waveform differs from that shown in Fig. 4-17(b) (e.g. Fig. 4-19), loosen the lock screw, then turn the capstan adjustment screw clockwise until the waveform is within the specified range.

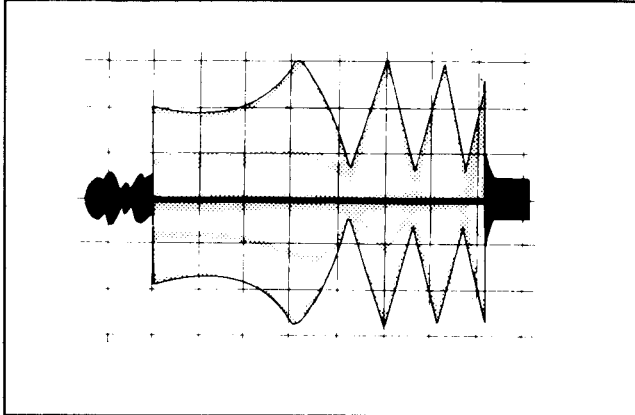


Fig. 4-19.

Note:

After turning the capstan adjustment screw, wait until the waveform stabilizes (about 10 — 15 seconds) before continuing with the adjustment.

- 5) Lock the capstan lock screw. (Turn clockwise until it stops, then turn about 30° more. At this point, the exit free waveform will change slightly, and if it goes out of the range shown in Fig. 4-17(a), (b) return to step 4) and re-adjust.
- 6) Flatten the waveform with No. 7 guide, and match No. 8 guide to the tape. If the exit waveform rises, flatten it again with No. 7 guide and match No. 8 guide to the tape again.
- 7) Confirm and adjust according to 4-1-3, exit side adjustment procedure items 4), 5).

Note:

Check with L830 tape.

4-4. THIN TAPE MOVEMENT CHECK METHOD DURING TAPE PATH ADJUSTMENT

After confirming the tape path by using the procedures of section 4-1 through 4-3, check the thin tape movement by the procedure given below.

- 1) Prepare one reel of the commercial L-830. Remove the cassette lid with reference to Fig. 4-1.
- 2) Run L-830 prepared in the procedure 1 in the PLAY mode and check the following points;

i) Entrance Side

Check if the tape bends and is damaged on the No. 4 guide bottom flange, the No. 5 guide top flange and the No. 6 guide top flange. (The curl of the tape is allowed, but the bend of the tape is not allowed.) (Fig. 4-20)

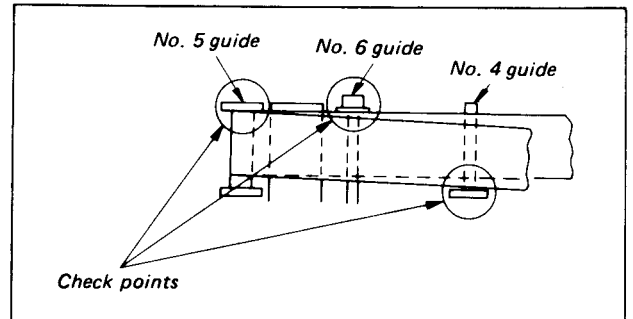


Fig. 4-20.

ii) Exit side

Check if the tape bends and is damaged on the No. 7 guide top flange, the No. 8 guide top flange and the No. 10 guide top and bottom flanges. (The curl of the tape is allowed, but the bend of the tape is not allowed.) (Fig. 4-21)

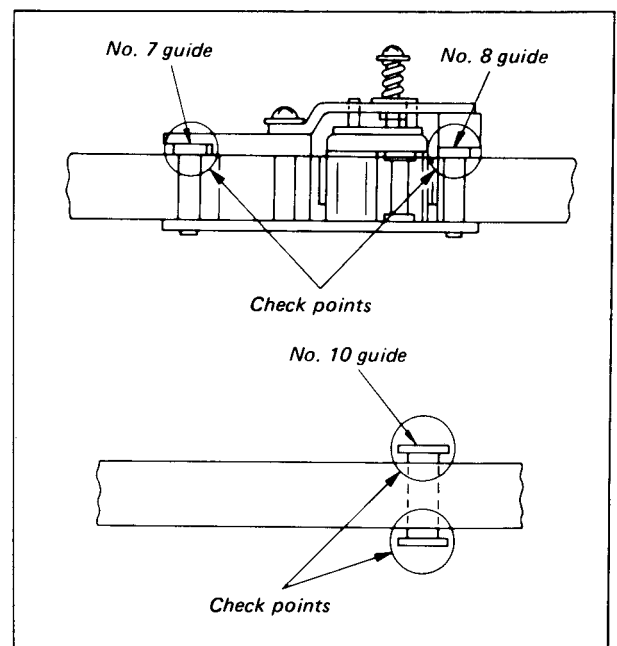


Fig. 4-21.

- 3) If the tape did not run normally in step 2, readjust the tape path by using KR5-2H.
 - a) The tape did not run normally on the entrance side, refer to 4-1-2.
 - b) The tape did not run normally on the exit side, refer to 4-1-3.

SECTION 5

ELECTRICAL ALIGNMENT

All the electrical alignment can be performed by using the equipment mentioned below, the alignment tape, and the PAL colour bar signal (100%).

[Equipment Required]

- (1) PAL Colour Monitor TV
 - (2) Oscilloscope, Dual-trace, Bandwidth . . . more than 10 MHz with delay mode
 - (3) Frequency Counter
 - (4) PAL Colour-Bar Generator
 - (5) Digital voltmeter
 - (6) VOM (20 k Ω /V)
 - (7) Audio Signal Generator
 - (8) Audio level meter (VTVM)
 - (9) Attenuator
 - (10) Alignment Tape, type: KR5-2H, Code No. 8-969-995-52
 - (11) Alignment Tool (Adjusting screwdriver for semi-fixed resistors and coils)
- Jig No. SL-0001, Code No. J-6080-001-A

[Setup for Alignment]

The antenna should be connected correctly to the antenna input terminal of the videocassette recorder.

It is important that the video output signal satisfies the specification because the telecast signal received by the incorporated tuner of the videocassette recorder is utilized as the adjustment signal of the machine. The incorporated tuner should be set to the channel with the best reception. The video signal should be checked with an oscilloscope connected to VIDEO OUT (BNC connector). Verify that the sync signal amplitude is approx. 0.3 Vp-p and the video signal amplitude is approx. 0.7 Vp-p at peak. Adjust the fine tuning while observing the signal and the TV screen so that the burst signal amplitude becomes approx. 0.3V $\pm$ 0.1 Vp-p. Also confirm that there is not spikes observed at the sync signal portion. (See Fig. 5-1.)

The video (colour bar) signal for the alignment is shown in Fig. 5-1.

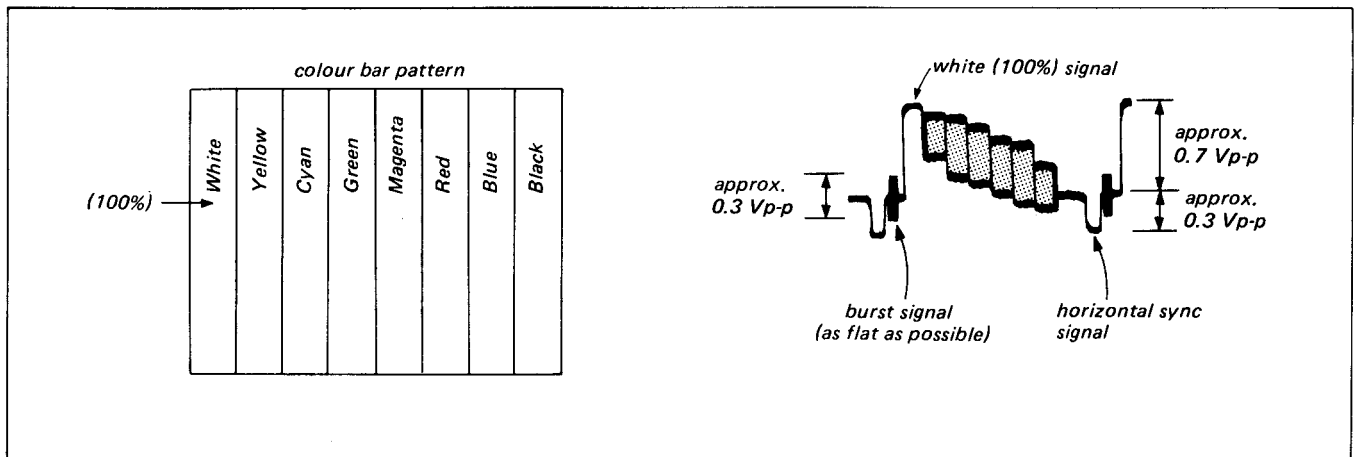


Fig. 5-1. Video (colour-bar) signal

[Alignment Tape]

KR5-2H

	Video signal	Audio signal	Playing time	Use for
1.	Colour bars	3 kHz – 5 dB	5 min	General performance, tape speed checks, switching position adjustment.
2.	Monoscope	333 Hz – 25 dB	5 min	Video head dihedral, audio level adjustment.
3.	RF sweep	5 kHz – 25 dB	5 min	Video, audio frequency characteristics, audio azimuth adjustment marker: 1, 2, 3.58, 4.5, 5.2 MHz
4.	Tracking 1 MHz (CH-B) *1 (Channel B is inserted in every 3 frames.)	1 kHz – 5 dB *2 (Signal is dropped out in the positions where channel B is inserted.)	5 min	Tracking, Audio height adjustments CTL Position check (Check if *1 and *2 are the same position.)

[Alignment Tool for Semi-fixed Variable Resistors and Coils]

Semi-fixed variable resistors and inductances should be adjusted with the alignment tool exclusively prepared for the adjustment of the components. A common screwdriver is too large for adjusting the components from the conductor side of a printed circuit board.

The metal blade of the alignment tool is used for variable resistors and trimmer capacitors and the plastic tip is used for variable inductances.

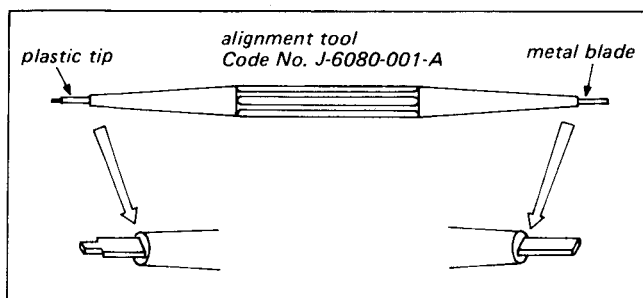


Fig. 5-2. Alignment tool

[Required levels and Impedances of Input and Output]

Video

Input VIDEO IN: BNC connector

1 Vp-p $\begin{matrix} +1.0 \\ -0.5 \end{matrix}$ Vp-p

75Ω unbalanced, sync negative

VIDEO OUT: BNC connector

1 Vp-p $\pm$ 0.1 Vp-p

75Ω unbalanced, sync negative

Audio

Input AUDIO IN: phono jacks

47 kΩ, -10 dBs

(0 dBs = 0.775V rms)

Output AUDIO OUT: phono jacks

Load impedance less than 10 kΩ

-10 dBs with 47 kΩ load unbalanced

[Colour Bar Signal]

The 100% colour bar signal recorded on the Alignment tape is shown in Fig. 5-3.

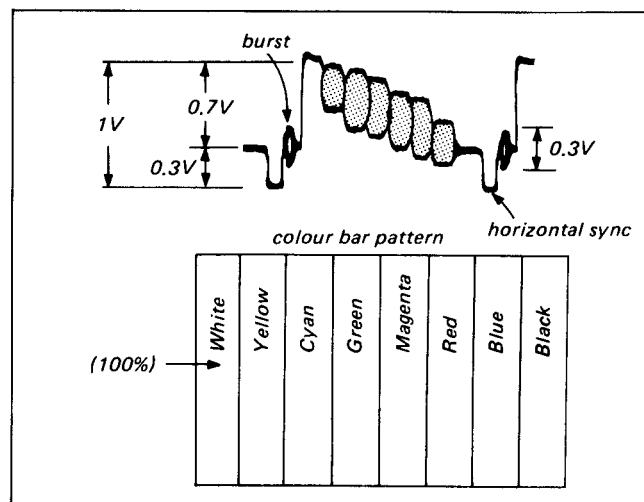


Fig. 5-3. Colour bar signal recorded on the alignment tape

[75Ω Terminating Method]

To terminate the video output terminal follow the steps shown in Fig. 5-4.

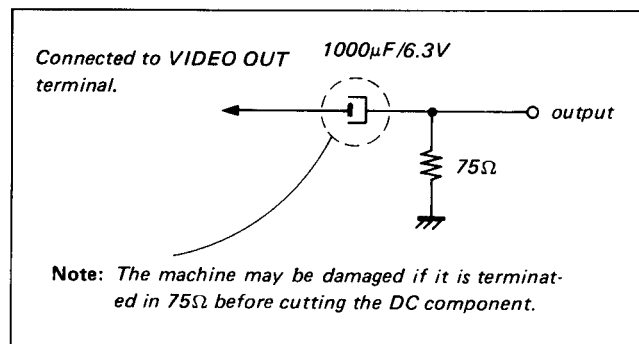
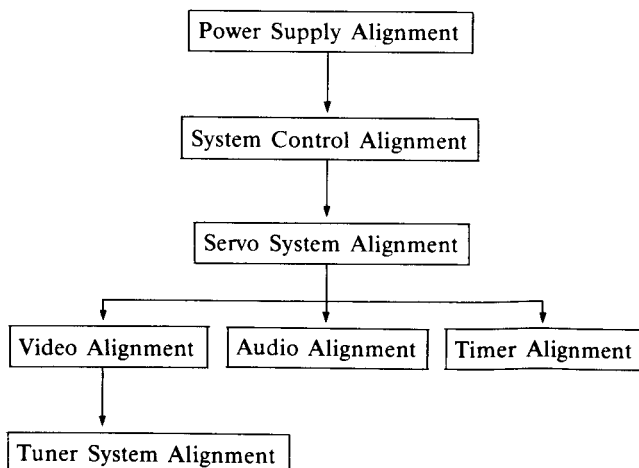


Fig. 5-4. 75Ω terminating circuit

[Adjustment procedure]

Adjust in the order given below.



[Adjustment method]

- i) Adjust to $900 \mu\text{sec} \pm 30 \mu\text{sec}$ with RV302. (See Fig. 5-8.)
- ii) Change connection of CH-2 only to Pin ③② of IC301.
- iii) Adjust to $900 \mu\text{sec} \pm 30 \mu\text{sec}$ with RV301. (See Fig. 5-9.)

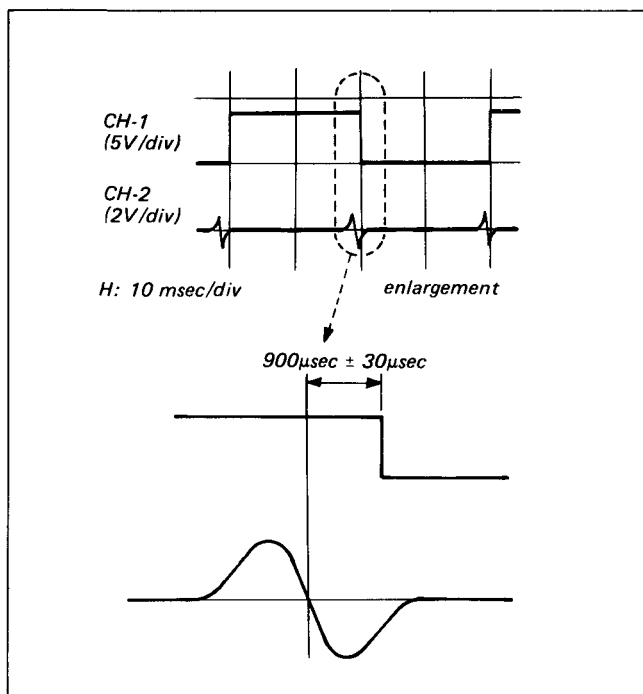


Fig. 5-9. RF switching position adjustment (2)

- 3) PICTURE SEARCH, Drum Free Speed Adjustment (SS-16 Board)

Mode: PICTURE SEARCH (FWD)

Signal: Alignment tape colour bar or monoscope

Frequency counter: Pin ④ of CN312 (TP404)

[Adjustment method]

Adjust to $64 \mu\text{sec} \pm 0.3 \mu\text{sec}$ with RV310. (See Fig. 5-10.)

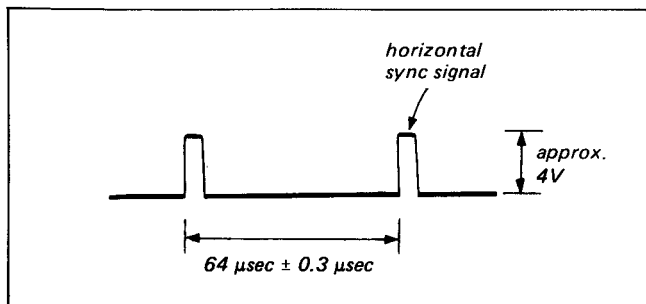


Fig. 5-10. PICTURE SEARCH, drum free speed adjustment

5-3-2. Capstan Servo System Alignment

- 1) Capstan DC Bias Adjustment (SS-16 Board)

Mode: playback

Signal: Alignment tape colour bar or monoscope

Oscilloscope: TP407 (Pin ②① of IC301)

[Adjustment method]

Adjust the duty (ratio for A and B) to $50\% \pm 5\%$ with the RV307.

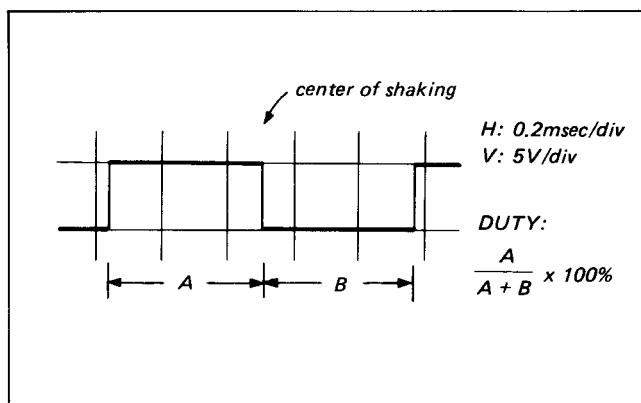


Fig. 5-9. Capstan DC bias adjustment

- 2) PICTURE SEARCH, Capstan DC Bias Adjustment (SS-16 Board)

Mode: PICTURE SEARCH (FWD)

Signal: Alignment tape colour bar or monoscope

[Adjustment method]

- i) Set up the picture search (forward) mode and adjust with RV308 so that the progression of noise bars becomes as slow as possible. (See Fig. 5-10.)
- ii) Set up the picture search (reverse) mode and check that noise bars do not progress very quickly.

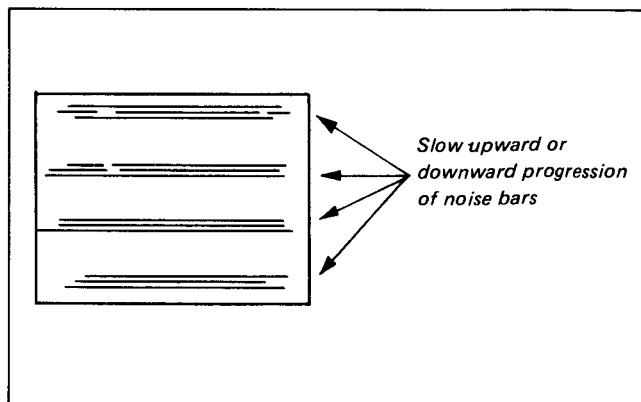


Fig. 5-10. PICTURE SEARCH, capstan DC bias adjustment

5-1. POWER SUPPLY CHECK (PS-22 Board)

Measure an E-E mode (power supply switch ON).

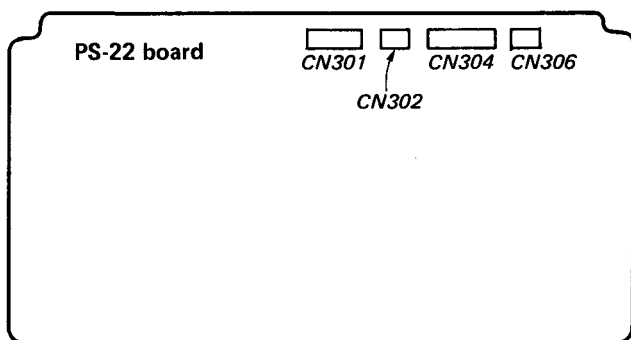


Fig. 5-5. Component layout

1. Unswitched 12V Check
Pin ⑦ of CN304 shall be $12 \pm 0.5V$.
2. Switched 12V Check
Pin ③ of CN301 shall be $12.2 \pm 0.2V$
3. Switched 9V Check
Pin ① of CN306 shall be $9.0 \pm 0.2V$
4. Switched 5V Check
Pin ① of CN301 shall be $5.2 \pm 0.5V$

[Alignment method]

Adjust to $553 \mu\text{sec} \pm 10 \mu\text{sec}$ with RV303. (See Fig. 5-7.)

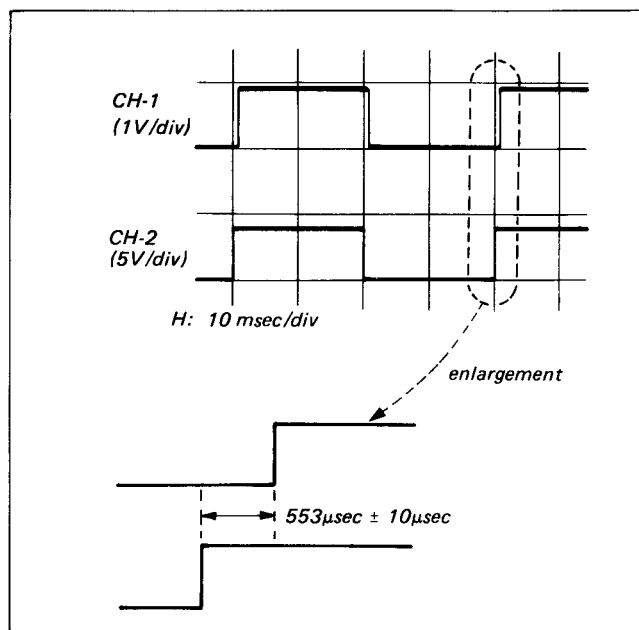


Fig. 5-7. Drum free speed adjustment

5-2. SYSTEM CONTROL CHECK (SS-16 Board)

1. Clock Frequency Check

Mode: E-E
Signal: None
Frequency counter: Pin ②⑥ of IC601 (TP601)
Check: $f: 4 \text{ MHz}$

2) RF Switching Position Adjustment (SS-16 Board)

Mode: Playback
Signal: Alignment tape colour bar or monoscope
Oscilloscope: CH-1 TP402 (Pin ③⑨ of IC301)
CH-2 Pin ④⑩ of IC301

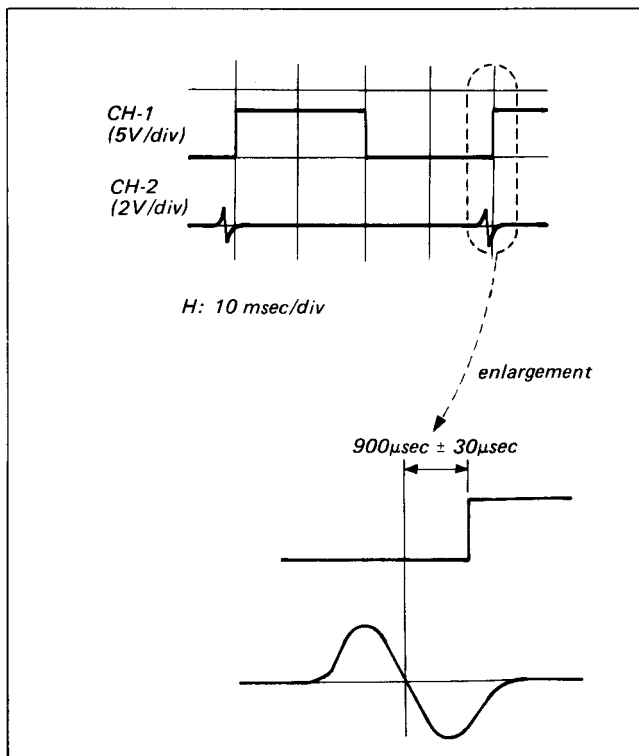
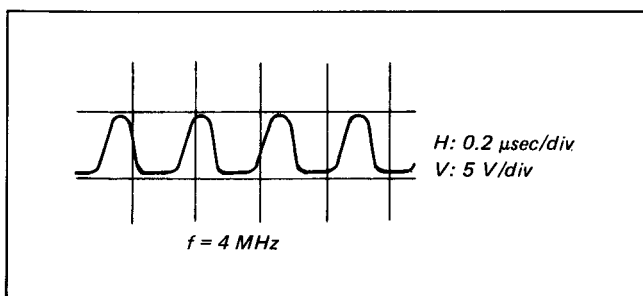


Fig. 5-8. RF switching position adjustment (1)

5-3. SERVO SYSTEM ALIGNMENT

Alignment Sequence

1. Drum servo system alignment
2. Capstan servo system alignment

5-3-1. Drum Servo System Alignment

- 1) Drum Free Speed Adjustment (SS-16 Board)
Mode: Playback
Signal: Alignment tape colour bar, or monoscope
Oscilloscope: CH-1 TP405 (Pin ⑬ of IC301)
CH-2 TP402 (Pin ③⑨ of IC301)

- 3) Tracking Center Adjustment (SS-16 Board)
 Mode: Playback
 Signal: Alignment tape colour bar, or monoscope
 Oscilloscope: CH-1 TP405 (Pin ⑬ of IC301)
 CH-2 TP406 (Pin ⑮ of IC301)

[Adjustment method]

- i) Set the TRACKING knob to the center click position.
- ii) Adjust to $7.05 \text{ msec} \pm 0.05 \text{ msec}$ with RV304. (See Fig. 5-11.)

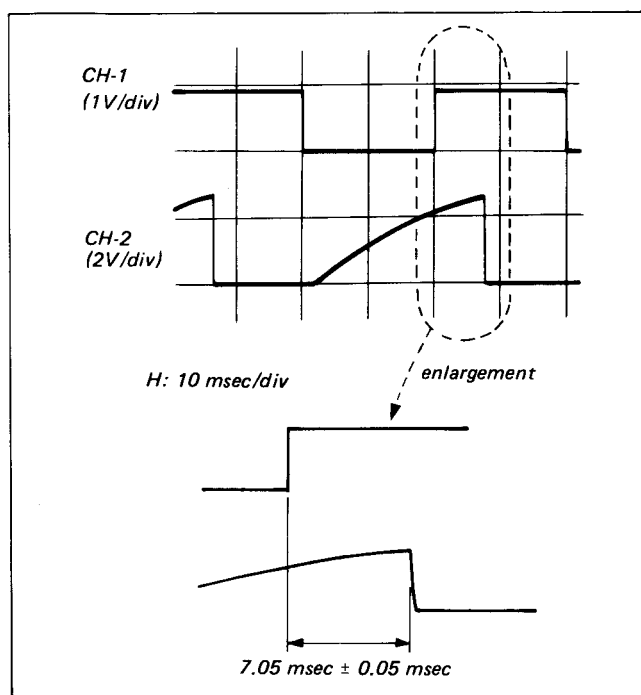


Fig. 5-11. Tracking center adjustment

5-4. PAL VIDEO SYSTEM ALIGNMENT

As a rule, first the playback system is aligned with an alignment tape to check that it operates normally, then the recording system is aligned.

The alignment sequence is shown below. The Y signal and chroma signal systems are aligned for both playback and recording systems.

Colour video signal supplied by the PAL colour bar generator is used as video input signal for video system alignment in the record mode. Check that the sync and colour burst signals conform to the specifications designated in "Set-up for Alignment" in Fig. 5-1.

[Playback System Alignment]

1. Playback frequency characteristic adjustment
2. Expand adjustment
3. Y-comb adjustment
4. Dropout compensator adjustment
5. Playback video level adjustment
6. Carrier balance adjustment
7. Chroma comb filter adjustment
8. Jog exchange chroma level adjustment
9. Shift adjustment

[Record System Alignment]

1. Sync and peak AGC adjustment
2. Carrier set adjustment
3. Deviation adjustment
4. Compress adjustment
5. $1/2 f_H$ shift adjustment
6. Dark clip and white clip adjustment
7. Y record current adjustment
8. 4.43 MHz REF adjustment
9. Pilot burst flag adjustment
10. ACC adjustment
11. AFC adjustment
12. AFC offset adjustment
13. Pilot burst signal level adjustment
14. Cleaning flag adjustment
15. Chroma record current adjustment

5-4-1. Playback System Alignment

1) Playback Frequency Characteristic Adjustment (RY-1 Board)

- Adjust both the A and B channels.
- The B channel indicated by ().
- Mode: Playback
- Signal: Alignment tape RF sweep
- Oscilloscope: TP1 (Pin ⑤ of CN2)
- External trigger: TP2 (Pin ④ of CN2)

[Adjustment method]

- i) Turn tracking knob to maximum output.
- ii) Adjust RV2 to make the 2 MHz amplitude of A and B channels equal. (See Fig. 5-12)
- iii) Set the trigger slope to $-(+)$.
- iv) Adjust the 5.2 MHz amplitude to 55 — 75% of the 2 MHz amplitude with RV3 (RV4).

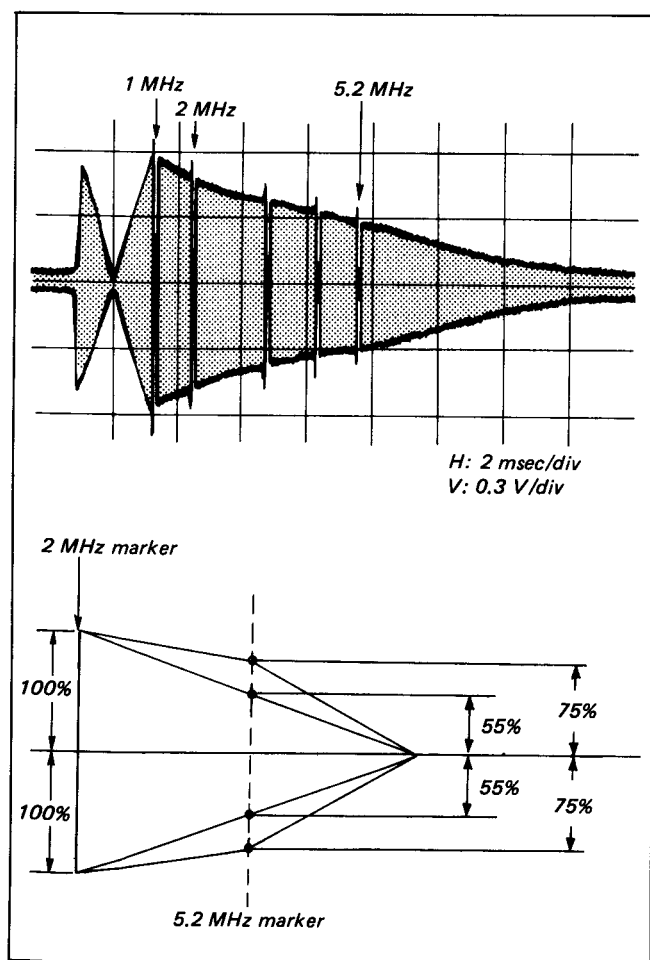


Fig. 5-12. Playback amplifier frequency characteristic adjustment

2) Expand Adjustment (RY-1 Board)

- Mode: Playback
- Signal: Colour bar
- Digital voltmeter: See Fig. 5-13.

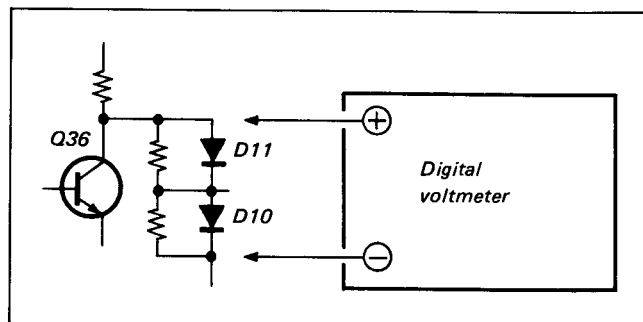


Fig. 5-13.

[Adjustment method]

- i) Adjust to 0.43 ± 0.01 Vdc with RV13.

3) Y-Comb Adjustment (RY-1 Board)

- Mode: Playback
- Signal: Colour bar
- Oscilloscope: Pin ⑤ of IC4

[Adjustment method]

- i) Adjust RV12 for minimum output. (See Fig. 5-14.)

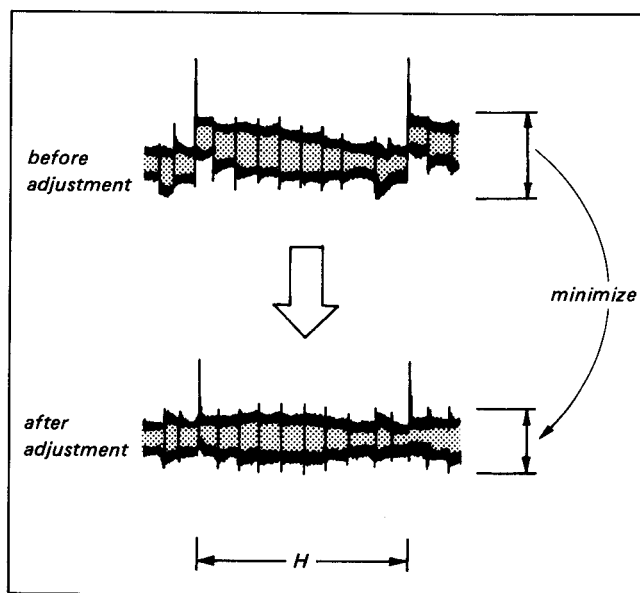


Fig. 5-14. Y-comb adjustment

4) Dropout Compensator Threshold Adjustment (RY-1 Board)

- Mode: Playback
- Signal: A recorded tape with dropouts

[Adjustment method]

- i) Turn RV11 fully clockwise (↻) as seen from the pattern side. In this state, dropouts appear on the monitor screen.
- ii) Slowly turn RV11 counterclockwise (↺) and set to make the dropouts disappear.
- iii) Rewind the tape and verify that the dropouts described in (i) above have disappeared.

5-4-2. Record System Alignment

- 1) Sync and Peak AGC Adjustment (YC-25 Board)

Mode: E-E
Oscilloscope: VIDEO OUT (75 Ω terminated)
Signal: B/W

[Adjustment method]

- i) Turn RV10 fully counterclockwise ($\curvearrowright$) as seen from the pattern side. (Peak AGC off)
- ii) Adjust to 1 Vp-p with RV11.
- iii) Turn RV10 clockwise ($\curvearrowleft$) and set it so that the output level just starts to lower.

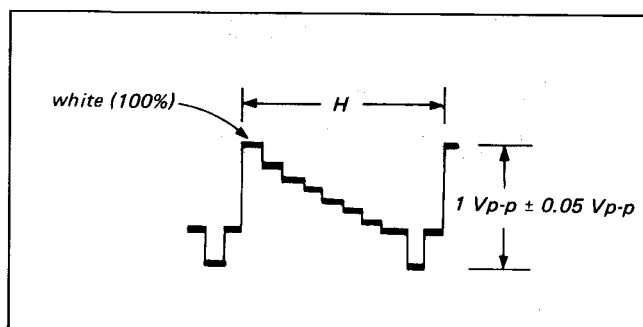


Fig. 5-18. Sync and peak AGC adjustment

- 2) Carrier Set Adjustment (RY-1 Board)

Mode: E-E
Signal: None
Frequency counter: Pin ④ of IC3

[Adjustment method]

- 1) Adjust to 3.8 MHz $\pm$ 0.04 MHz with RV8.

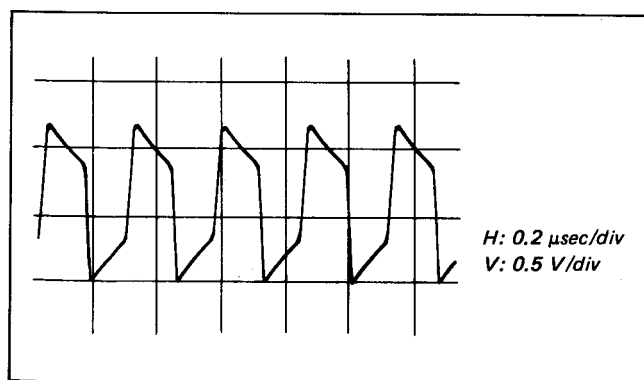


Fig. 5-19. Carrier set adjustment

- 3) Deviation Adjustment (YC-25 Board)
 - The playback system adjustment and the carrier set adjustment in Paragraph 2) above must be completed before making this adjustment.

Mode: Self-recording and playback
Signal: Colour bar
Oscilloscope: Pin ④ of CN001, VIDEO OUT (75 Ω terminated)

[Adjustment method]

- i) Supply the colour bar signal and set up E-E mode.
- ii) Connect the oscilloscope to Pin ④ of CN001.
- iii) Adjust the Y signal level to 1 Vp-p with RV012.
- iv) Set up RECORD mode.
- v) Playback the recorded section of the tape.
- vi) Connect the oscilloscope to VIDEO OUT.
- vii) Check that the video signal level is 1.0 Vp-p $\pm$ 0.05 Vp-p. If the level is outside of this range, repeat Steps iv) through vi) above adjusting with RV012 until the standard value is obtained.

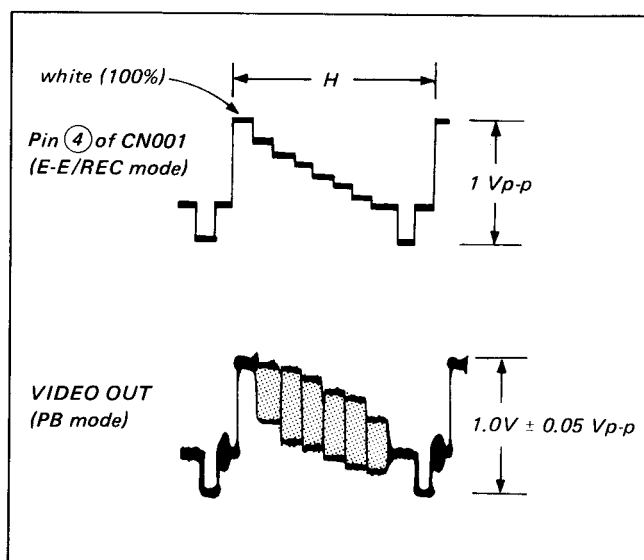


Fig. 5-20. Deviation adjustment

- 4) Compress Adjustment (RY-1 Board)

Mode: E-E
Signal: None
Digital voltmeter: See Fig. 5-21.

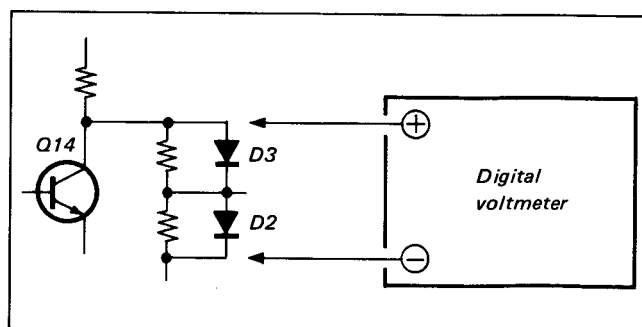


Fig. 5-21.

[Adjustment method]

- i) Adjust to 0.3V $\pm$ 0.01 Vdc with RV7.
- 5) 1/2 f_H Shift Adjustment (RY-1 Board)

Mode: Record
Signal: None
Spectrum analyzer: Pin ④ of IC3

- 5) Playback Video Level Adjustment (RY-1 Board, YC-25 Board)
 Mode: Playback
 Signal: Alignment tape colour bar
 Oscilloscope: VIDEO OUT (75Ω terminated) on YC-25 Board

[Adjustment method]

- i) Adjust to $1.0V \pm 0.05 V_{p-p}$ with RV14 on RY-1 Board.

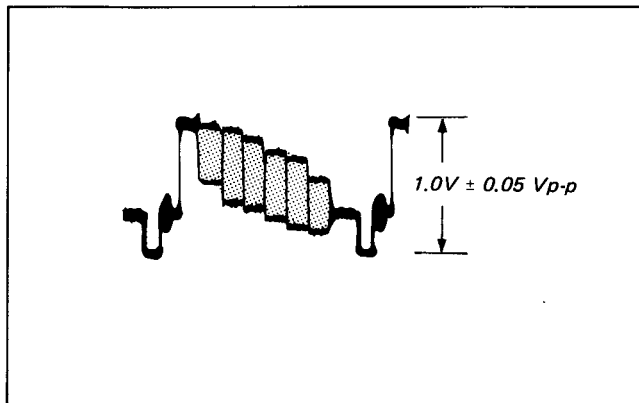


Fig. 5-15. Playback video level adjustment

- 8) JOG Exchange Chroma level Adjustment (YC-25 Board)
 Mode: PB • PAUSE (STILL)
 Signal: colour bar
 Oscilloscope: Pin ⑧ of IC009

[Adjustment method]

- i) Adjust RV013 so that the fluctuation of level is minimum. (See Fig. 5-16.)

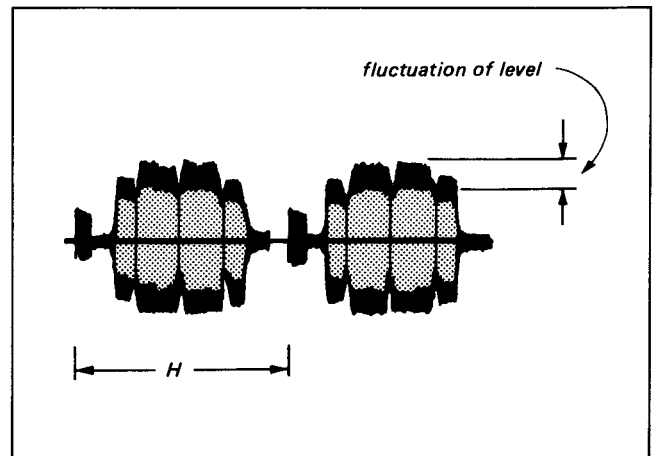


Fig. 5-16. JOG EXCH. C. level adjustment

- 6) Carrier Balance Adjustment (YC-25 Board)
 Mode: Playback
 Signal: Alignment tape colour bar
 Adjust while observing the monitor TV screen.

[Adjustment method]

- i) Minimize beats with RV004.

- 7) Chroma Comb Filter Adjustment (YC-25 Board)
 Mode: Playback
 Signal: Alignment tape colour bar
 Adjust while observing the monitor TV screen.

[Adjustment method]

- i) Minimize beats with RV003 and LV002.

- 9) Shift Adjustment (YC-25 Board)
 Mode: Playback
 Signal: Alignment tape colour bar
 Oscilloscope: Base of Q034

[Adjustment method]

- i) Align the signal level (per 1H) with RV008.

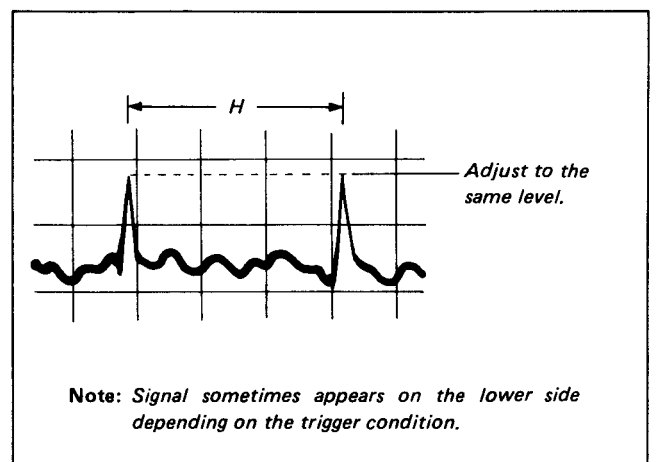


Fig. 5-17. Shift adjustment

10) ACC Adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ②④ of IC001

[Adjustment method]

- i) Adjust to $0.68V \pm 0.05V_{p-p}$ with RV001. (See Fig. 5-26.)

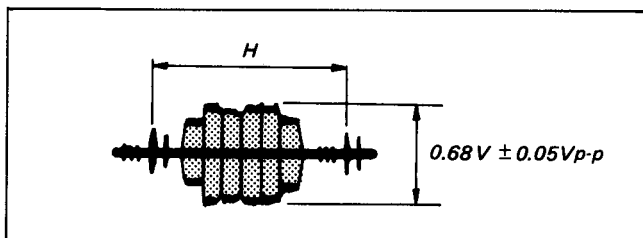


Fig. 5-26. ACC adjustment

11) AFC Adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ①⑥ of IC003

[Adjustment method]

- i) Adjust to $1.7V_{dc} \pm 0.1V_{dc}$ with RV006. (See Fig. 5-27.)

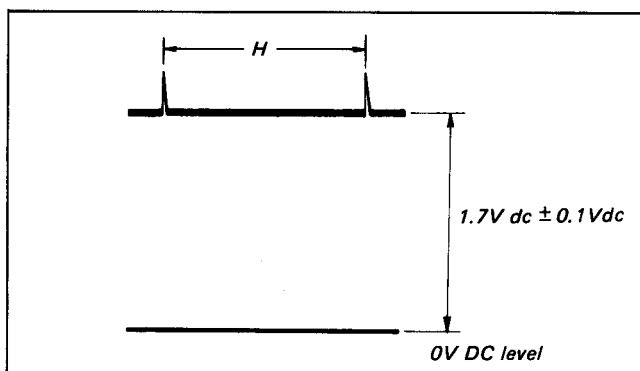


Fig. 5-27. AFC adjustment

12) AFC Offset Adjustment (YC-25 Board)

Mode: Record
Signal: Colour bar
Oscilloscope: Pin ①⑥ of IC003

[Adjustment method]

- i) Adjust RV005 so that the fluctuation of DC level is minimum. (See Fig. 5-28.)

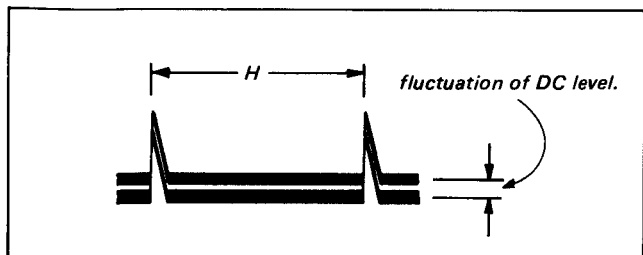


Fig. 5-28. AFC offset adjustment

13) Pilot Burst Signal Level Adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ⑧ of IC002

[Adjustment method]

- i) Align the pilot burst signal with the chroma signal level using RV002.

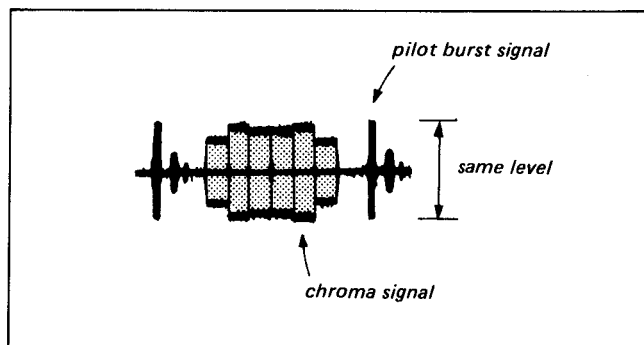


Fig. 5-29. Pilot burst signal level adjustment

14) Cleaning Flag Adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Oscilloscope: CH1 Pin ⑥ of IC12
CH2 Pin ⑨ of IC12

[Adjustment method]

- i) Adjust to $1.0\mu sec \pm 0.1\mu sec$ with RV006. (See Fig. 5-30.)

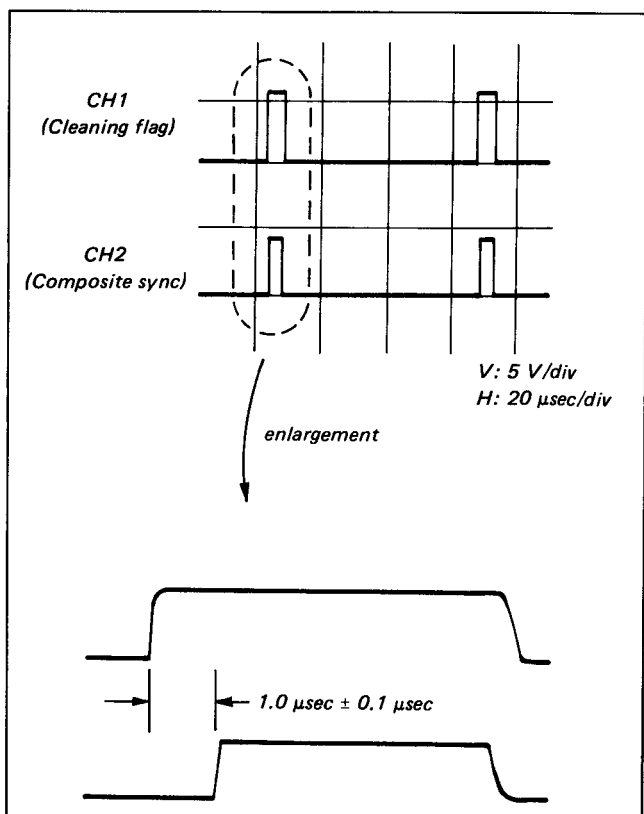


Fig. 5-30. Cleaning flag adjustment

[Adjustment method]

- i) Adjust RV6 so that the fluctuation of frequency is $7.8 \text{ kHz} \pm 1.5 \text{ kHz}$.

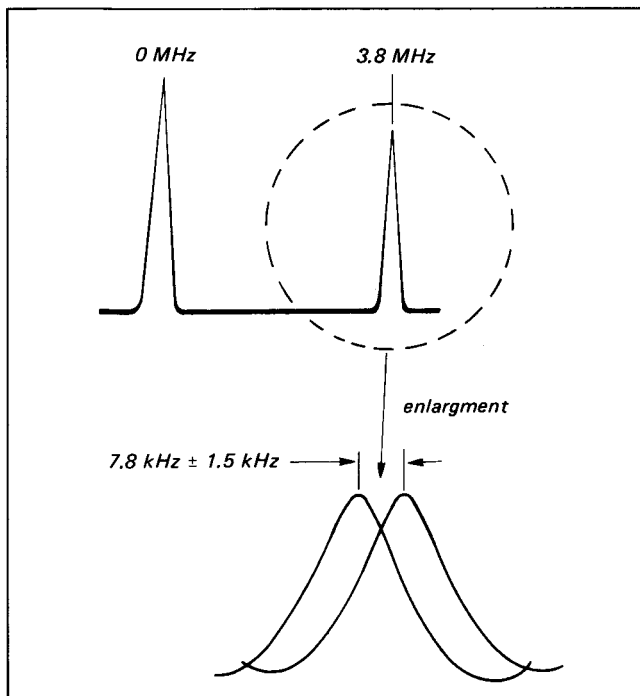


Fig. 5-22. $1/2 f_H$ shift adjustment

- 6) Dark Clip and White Clip adjustment (RY-1 Board)
Mode: E-E
Signal: Colour bar
Oscilloscope: Emitter of Q17

[Adjustment method]

- i) Adjust RV10 so that the signal tip (dark peak) is $70\% \pm 10\%$. (See Fig. 5-23.)
- ii) Adjust RV9 so that the signal tip (white peak) is $220\% \pm 10\%$.

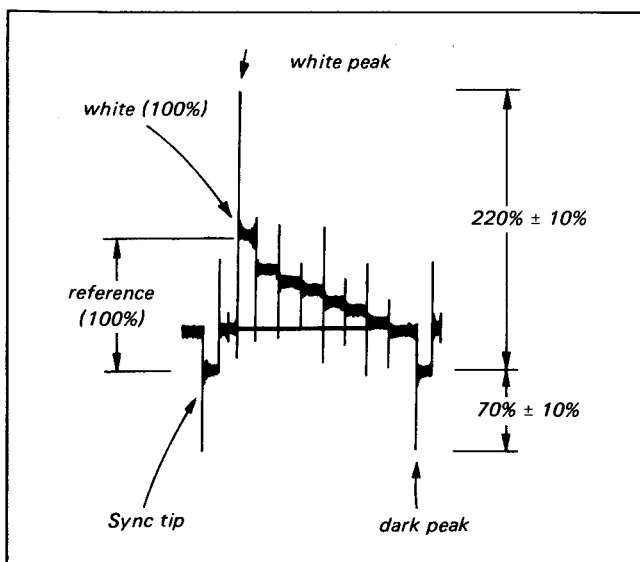


Fig. 5-23. Dark clip and white clip adjustment

- 7) Y Record Current Adjustment (RY-1 Board)

Mode: Record
Signal: None
Oscilloscope: Pin ② of CN3 (TP4)

[Adjustment method]

- i) Adjust to $380 \text{ mV} \pm 10 \text{ mVp-p}$ with RV1. (See Fig. 5-24)

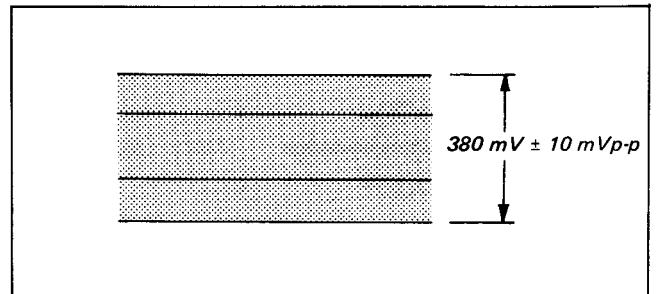


Fig. 5-24. Y record current adjustment

- 8) 4.43 MHz REF. adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Frequency counter: Pin ⑦ of CN008

[Adjustment method]

- i) Adjust to $4.433619 \text{ MHz} \pm 5 \text{ Hz}$ with CV001.

- 9) Pilot Burst Flag Adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ⑩ of IC12

[Adjustment method]

- i) Adjust to $2.2 \mu\text{sec} \pm 0.1 \mu\text{sec}$ with RV009. (See Fig. 5-25.)

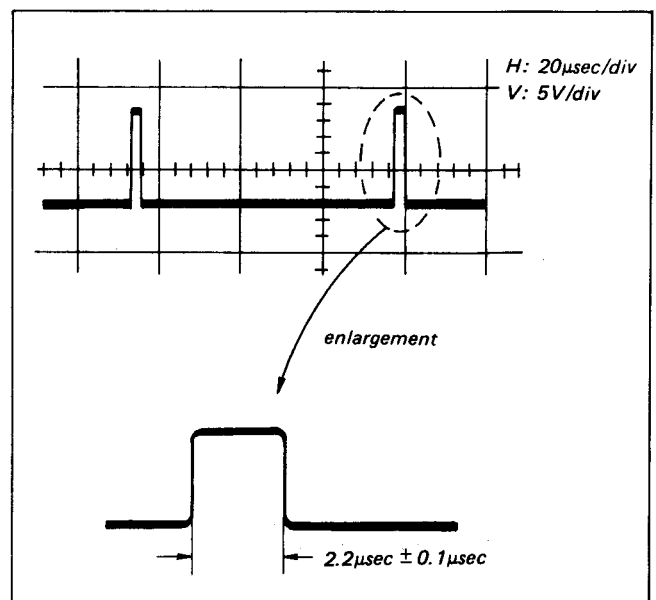


Fig. 5-25. Pilot burst flag adjustment

4. BNR Adjustment

- (1) Short R524 (R624) with a jumper wire.
- (2) Supply a 1 kHz signal at -5 dBs to the base of Q502 (Q602). (See Fig. 5-33).
- (3) Turn on the BNR switch and set up the PLAYBACK mode.
- (4) Connect VTVM to pin ④ of IC502 (IC602).
- (5) Adjust to -5 dBs with RV503 (RV603).
- (6) Change the signal to 10 kHz, -5 dBs.
- (7) Adjust to -5 dBs with RV504 (RV604).
- (8) Repeat (2) through (7), and ensure that -5 dBs $\pm$ 0.5 dB is obtained for both 1 kHz and 10 kHz signals.
- (9) Remove the jumper wire after making the adjustment.

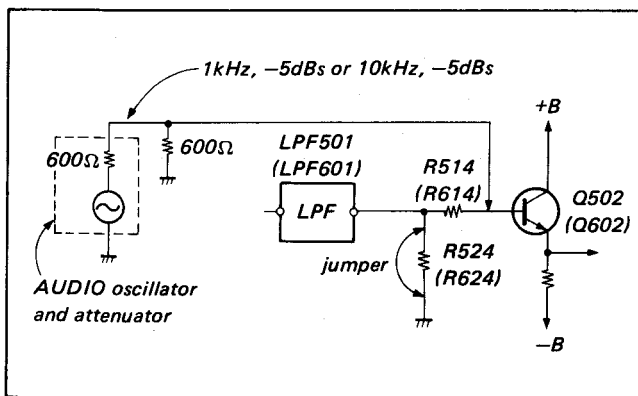


Fig. 5-33. BNR adjustment

5. BNR Characteristic Check

- (1) Short R524 (R624) with a jumper wire. (See Fig. 5-33).
- (2) Supply a 1 kHz signal at -35 dBs to the base of Q502 (Q602).
- (3) Turn on the BNR switch and set up the PLAYBACK mode.
- (4) Connect VTVM to pin ④ of IC502 (IC602).
- (5) Ensure that the VTVM level is -50 dBs $\pm$ 2 dB.
- (6) Change the signal to 10 kHz, -35 dBs.
- (7) Ensure that the VTVM level is -58 dBs $\pm$ 2 dB.
- (8) Set up the STOP mode.
- (9) Connect VTVM to pin ⑭ of IC502 (IC602).
- (10) Ensure that the VTVM level is -24 dBs $\pm$ 2 dB.
- (11) Change the signal to 1 kHz, -35 dBs.
- (12) Ensure that the VTVM level is -22 dBs $\pm$ 2 dB.
- (13) Remove the jumper wire.

6. Playback Frequency Characteristic Check

- (1) Turn off the BNR switch.
- (2) Play back 333 Hz and 5 kHz from the alignment tape and check the AUDIO OUT level at 5 kHz is 0 ± 1 dB relative to the one at 333 Hz.

7. Playback Level Adjustment

- (1) Turn off the BNR switch.
- (2) Play back the 333 Hz segment of alignment tape.
- (3) Adjust RV501 (RV601) so that the AUDIO OUT level is -31 dBs $\pm$ 0.5 dB.

8. Bias Oscillator Check

- (1) Set the input signal level to zero and set up the RECORD mode.
- (2) Connect a frequency counter to pin ⑧ of CN504. The reading should be 65 kHz $\pm$ 6.5 kHz. (See Fig. 5-34.)

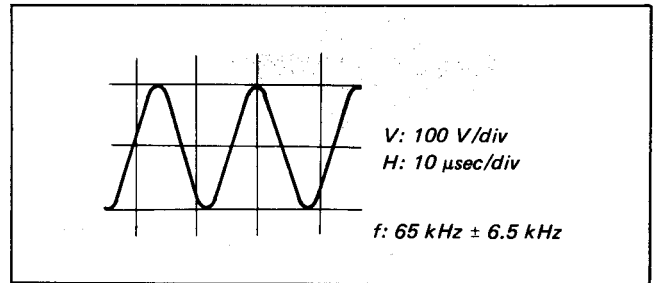


Fig. 5-34. Bias oscillator check

9. Bias Trap Adjustment

- (1) Set the input signal level to zero and set up the RECORD mode.
- (2) Connect an oscilloscope to pin ⑬ of IC501 (IC601).
- (3) Minimize bias leak with TRP501 (TRP601).
Value: minimum level below 0.7 Vp-p. (See Fig. 5-35).

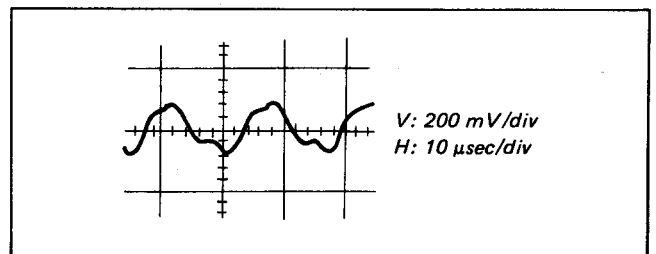


Fig. 5-35. Bias trap adjustment

10. Record Bias Adjustment

- (1) Turn on the BNR switch.
- (2) Supply a 333 Hz signal at -35 dBs to AUDIO IN.
- (3) Record the signal.
- (4) Change the signal to 7 kHz, -35 dBs.
- (5) Record the signal.
- (6) Play back the recorded section of the tape and check that AUDIO OUT level at 7 kHz is $\pm$ 1 dB relative to the level at 333 Hz. If the level is outside this range, repeat Steps (2) through (5) adjusting with CV501 (CV601) until the standard is met.

15) Chroma Record Current Adjustment (RY-1 Board)

Mode: Record
Signal: Colour bar
Oscilloscope: Pin ③ of CN3 (TP5)

[Adjustment method]

- i) Adjust to $250 \text{ mV} \pm 10 \text{ mVp-p}$ with RV5. (See Fig. 5-31.)

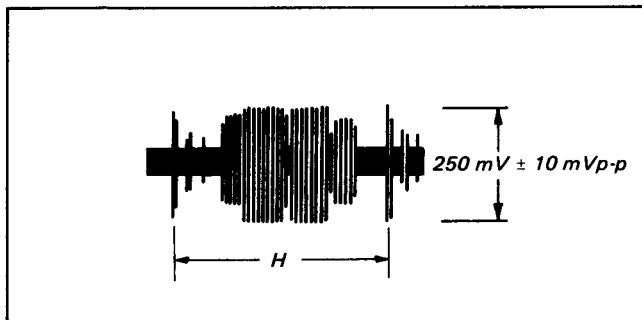


Fig. 5-31. Chroma record current adjustment

5-5. AUDIO SYSTEM ADJUSTMENT (AM-4 Board)

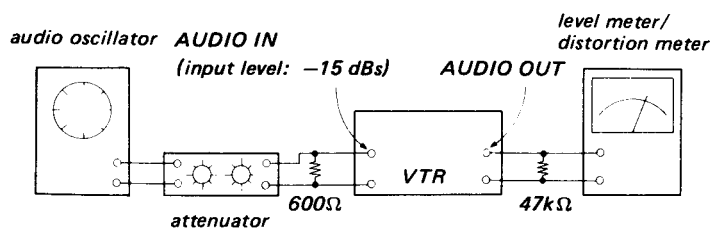
Use a Dynamicon tape for adjustments.

Note:

Set the INPUT SELECT switch to LINE.

Part names enclosed with parentheses are adjustment of CH-2.

[Connection of Related Equipment]



[Adjustment method]

1. ACE head adjustment... See "Mechanical Adjustment"
2. Pre-amp gain adjustment
3. AGC balance adjustment
4. BNR adjustment
5. BNR characteristic check
6. Playback frequency characteristic check
7. Playback level adjustment
8. Bias oscillator check
9. Bias trap adjustment
10. Record bias adjustment
11. Record current adjustment
12. Overall S/N check
13. Overall distortion check

1. ACE Head Adjustment

Refer to "Mechanical Adjustment"

2. Pre-amp Gain Adjustment

- (1) Supply a 333 Hz signal at -15 dBs to AUDIO IN.
- (2) Set up the E-E mode.
- (3) Connect VTVM to pin ④ of IC502 (IC602).
- (4) Check that the output level is $-5 \text{ dBs} \pm 1 \text{ dB}$.
If necessary, adjust by soldering. (See Fig. 5-32).

CONNECTION		OUTPUT LEVEL
OPEN		0dB
1	R519-IC501 ⑦	-1.0dB
(1)	(R619-IC601 ⑦)	
2	R560-IC501 ⑨	+1.0dB
(2)	(R660-IC601 ⑨)	

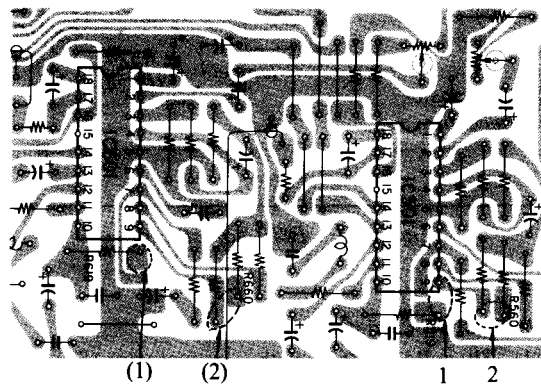


Fig. 5-32. Pre-amp gain adjustment

3. AGC Balance Adjustment

- (1) Supply a 333 Hz signal at -10 dBs to AUDIO IN of CH-1 and CH-2.
- (2) Set up the E-E mode.
- (3) Adjust RV701 so that the difference between the AUDIO OUT level of CH-1 and the one of CH-2 is within $0 \text{ dB} \pm 0.3 \text{ dB}$.

5-7. TIMER SYSTEM ADJUSTMENT (TM-41 Board)

1. Clock Adjustment

- (1) Connect a time interval counter to TP001.
- (2) Adjust to $15624.85 \mu\text{sec} \pm 0.05 \mu\text{sec}$ with TC001.

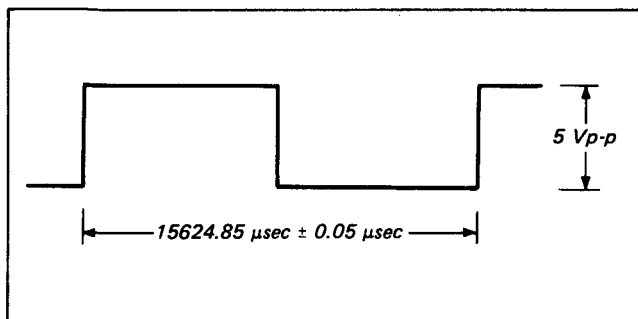


Fig. 5-36. Clock adjustment

11. Record Current Adjustment

- (1) Turn off the BNR switch.
- (2) Supply a 333 Hz signal at -15 dBs to AUDIO IN.
- (3) Record signals.
- (4) Play back the recorded section of the tape and check that the AUDIO OUT level is -10 dBs ± 0.5 dB. If the level is outside this range, repeat Steps (2) through (3) above adjusting with RV502 (RV602) until the standard value is obtained.

12. Overall S/N Check

- (1) Turn on the BNR switch.
- (2) Supply a 333 Hz signal at -15 dBs to AUDIO IN.
- (3) Record the signal.
- (4) Set the AUDIO IN signal level to zero and record the signal.
- (5) Play back the recorded section of the tape and check the AUDIO OUT level difference is greater than 42 dB.

13. Overall Distortion Check

- (1) Turn off the BNR switch.
- (2) Supply a 333 Hz signal at -15 dBs to AUDIO IN.
- (3) Record the signal.
- (4) Play back the recorded section of the tape and verify that the distortion of the AUDIO OUT signal is below 8%.

5-6. TUNER SYSTEM ADJUSTMENT (TU-50 Board)

1. Tuner AGC adjustment

- (1) Set the DX/LOCAL switch on the rear panel to DX.
- (2) Input RF signals (UHF channel, 61 dB μ /75 Ω open) from a colour bar generator, etc.
- (3) Connect a digital voltmeter to pin ④ of IC001.
- (4) Adjust RV001 to $7.2V \pm 0.1V$ dc.

2. AFT Adjustment

- (1) Set RV002 to the mechanical center.
- (2) Input RF signals, and adjust PRESET VR finely for the best picture quality, while watching the monitor screen.
- (3) Push the AFT switch to turn on the AFT function, and make the following adjustments.
- (4) Connect a digital voltmeter to pin ⑤ of IC001.
- (5) Adjust T004 to 6V dc.
- (6) Connect a digital voltmeter across pins ⑤ and ⑥ of IC001.
- (7) Adjust RV002 to $0V \pm 0.25V$ dc.

3. Stereophonic separation adjustment

Connect the sound-multiplexed TV test signal generator to the AERIAL IN terminal before performing adjustment.

- (1) Connect the signal generator to the VTR, setting it as follows:
Picture frame : Color bar
Mode of sound-channel: Stereophonic
Left sound-channel : Unused
Right sound-channel : Modulated at 1 kHz
- (2) Confirm that both stereophonic indicators (LED's A and B) are lit.
- (3) Connect the oscilloscope probe at pin ② on CN005.
- (4) Minimize the crosstalk component of the signal level at 1 kHz by using RV003.

[Colour Bar Signal]

The 100% colour bar signal recorded on the Alignment tape is shown in Fig. 5-38.

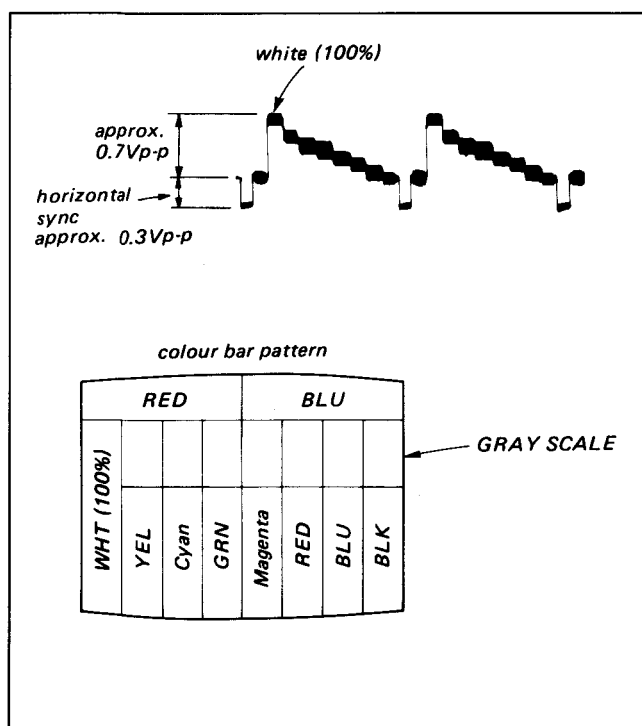


Fig. 5-38. Colour bar signal recorded on the alignment tape

1) SECAM ACK fo Adjustment (YC-25 Board)

Mode: E-E

Signal: SECAM colour bar

Oscilloscope: Pin ⑨ of IC007

[Adjustment method]

- Adjust LV004 until the amplitude is a maximum. (See Fig. 5-39)

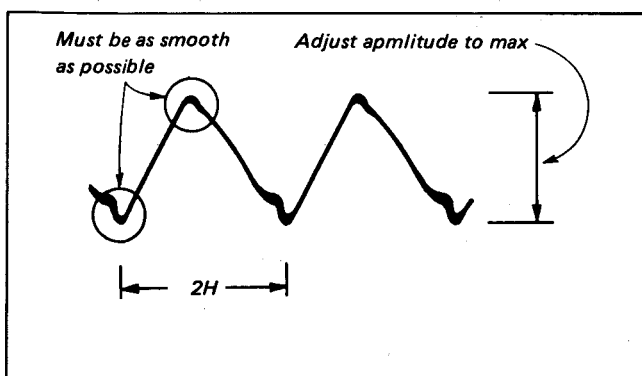


Fig. 5-39. SECAM ACK fo adjustment

2) Bell Filter Adjustment (YC-25 Board)

Mode: E-E

Signal: SECAM colour bar

Oscilloscope: Pin ① of CN001

[Adjustment method]

- Adjust LV001 until the waveform is flat. (See Fig. 5-40)

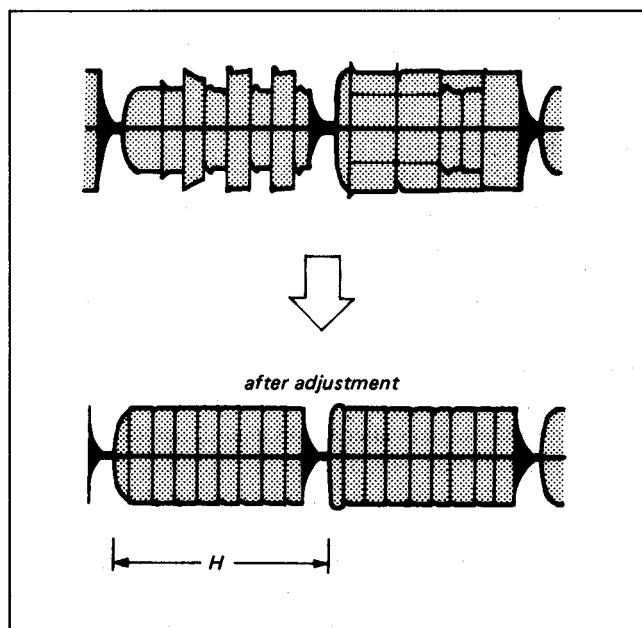


Fig. 5-40. Bell filter adjustment

3) Counter Bell Filter Adjustment (YC-25 Board)

Mode: Self-recording and playback

Signal: SECAM colour bar

Adjust while observing the monitor TV screen.

[Adjustment method]

- Record SECAM colour bar signals.
- Playback the recorded signals.
- While observing the monitor TV screen, adjust LV003 until the border between the red and blue areas is at its cleanest (minimum beats).

4) SECAM ACK Adjustment (YC-25 Board)

Mode: E-E

Signal: SECAM colour bar

Oscilloscope: Pin ⑨ of IC007

[Adjustment method]

- Adjust RV007 to $4.0V \pm 0.1V_{p-p}$.

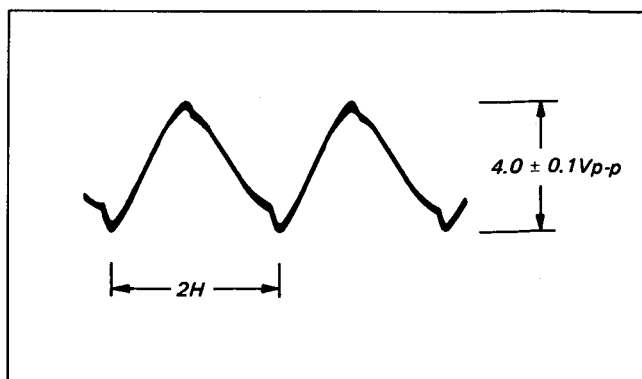


Fig. 5-41. SECAM ACK adjustment

5-8. SECAM VIDEO SYSTEM ALIGNMENT

- Make this adjustment after aligning the PAL video system.
- For this adjustment, use the equipment listed below in conjunction with an alignment tape and SECAM colour bar signals.

[Equipment Required]

- (1) SECAM Colour Monitor TV
- (2) Oscilloscope, Dual-trace, Bandwidth ... more than 10 MHz with delay mode
- (3) SECAM Colour-Bar Generator
- (4) Alignment Tape, Type: KR5-1J, Code No. 8-969-996-03

[Setup for Alignment]

In this alignment, video signals obtained from the pattern generator will be used as alignment signals. Therefore, the video output signals should be within the specifications. Verify video signals by connecting an oscilloscope to VIDEO OUT connector (75 Ω terminated). Check that the video signals are flat when the amplitude of the horizontal sync signal is about 0.3 Vp-p, the amplitude of the video portion is about 0.7 Vp-p, and the amplitude of the burst signal is about 0.3 Vp-p. The video signal (colour-bar signal) used in this alignment is shown in Fig. 5-37.

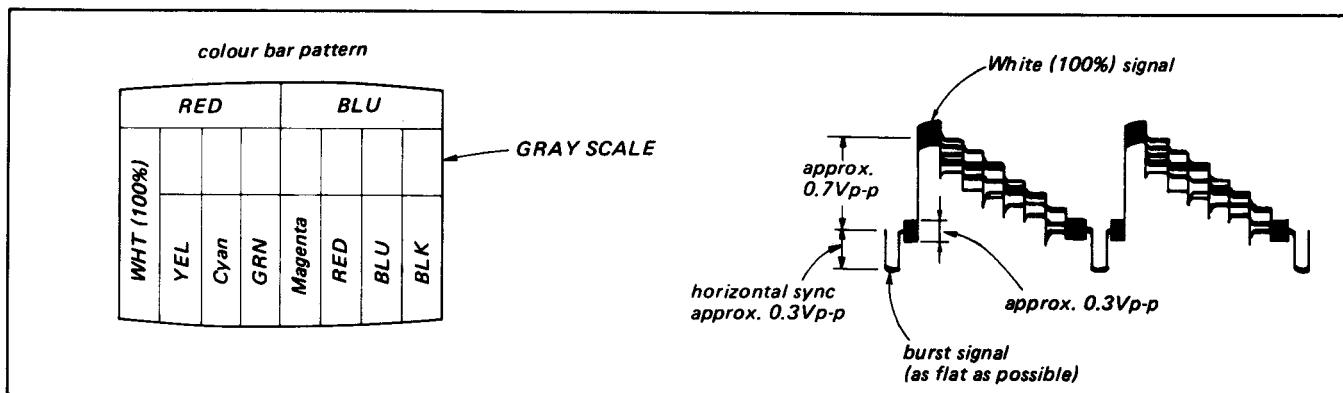


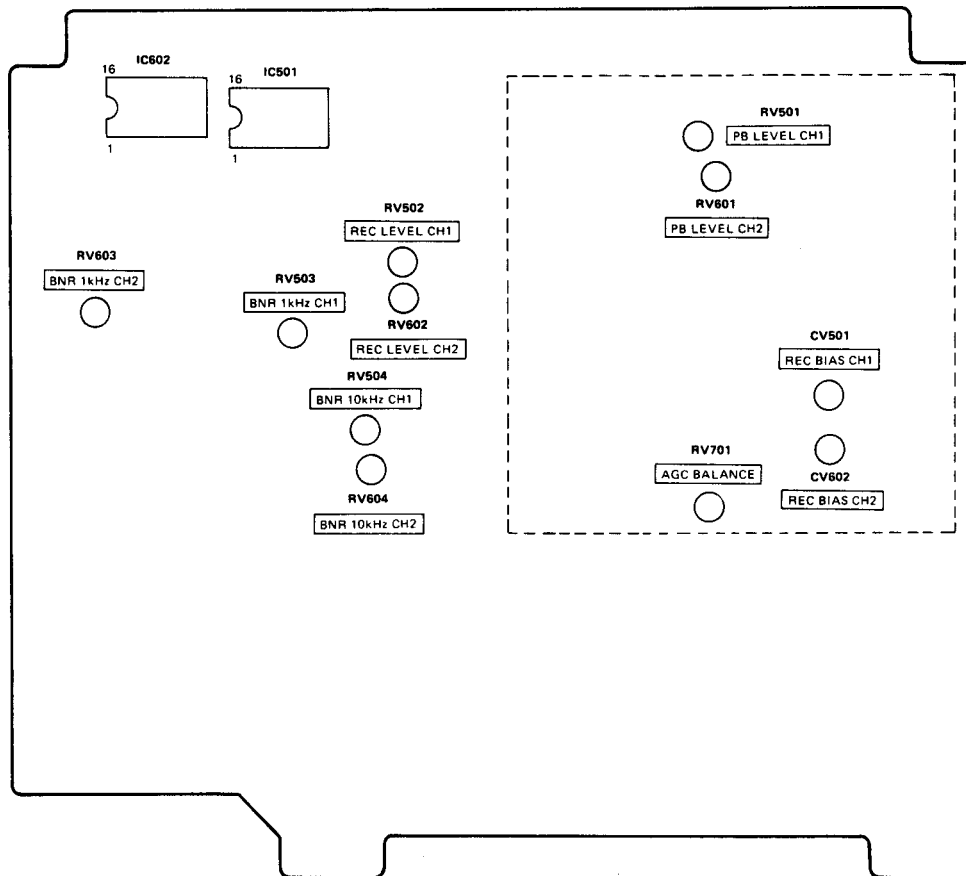
Fig. 5-37. SECAM video (colour bar) signal

[Alignment Tape]

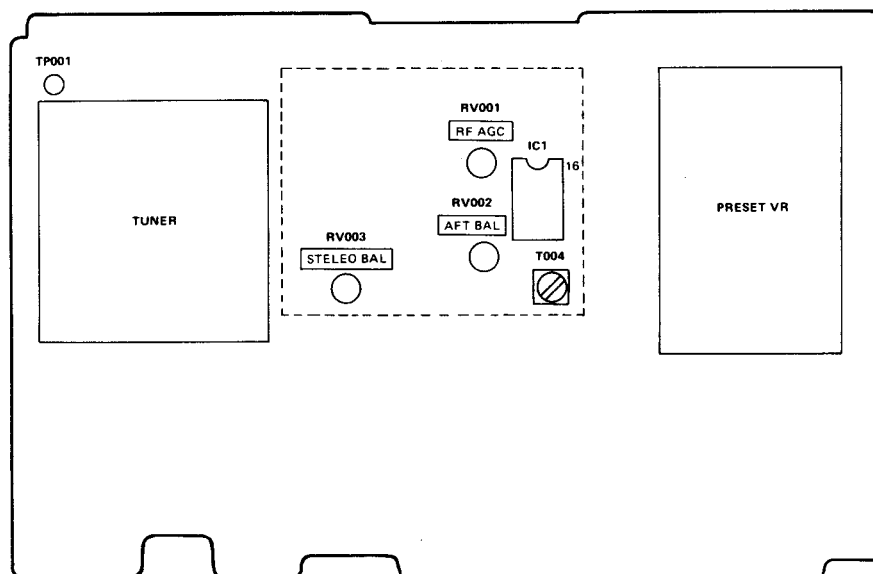
KR5-1J

	Video signal	Audio signal	Playing time	Use for
1.	Colour bars	3 kHz – 5 dB	5 min	General performance, tape speed checks, switching position adjustment.
2.	Monoscope	333 Hz – 25 dB	5 min	Video head dihedral, audio level adjustment.
3.	RF sweep	5 kHz – 25 dB	5 min	Video, audio frequency characteristics, audio azimuth adjustment marker: 1, 2, 3.58, 4.5, 5.2 MHz
4.	Tracking 1 MHz (CH-A) *1 (Channel B is inserted in every 3 frames.)	1 kHz – 5 dB *2 (Signal is dropped out in the positions where channel B is inserted.)	5 min	Tracking, Audio height adjustments CTL Position check (Check if *1 and *2 are the same position.)

AM-4 BOARD – COMPONENT SIDE –



TU-50 BOARD – COMPONENT SIDE –



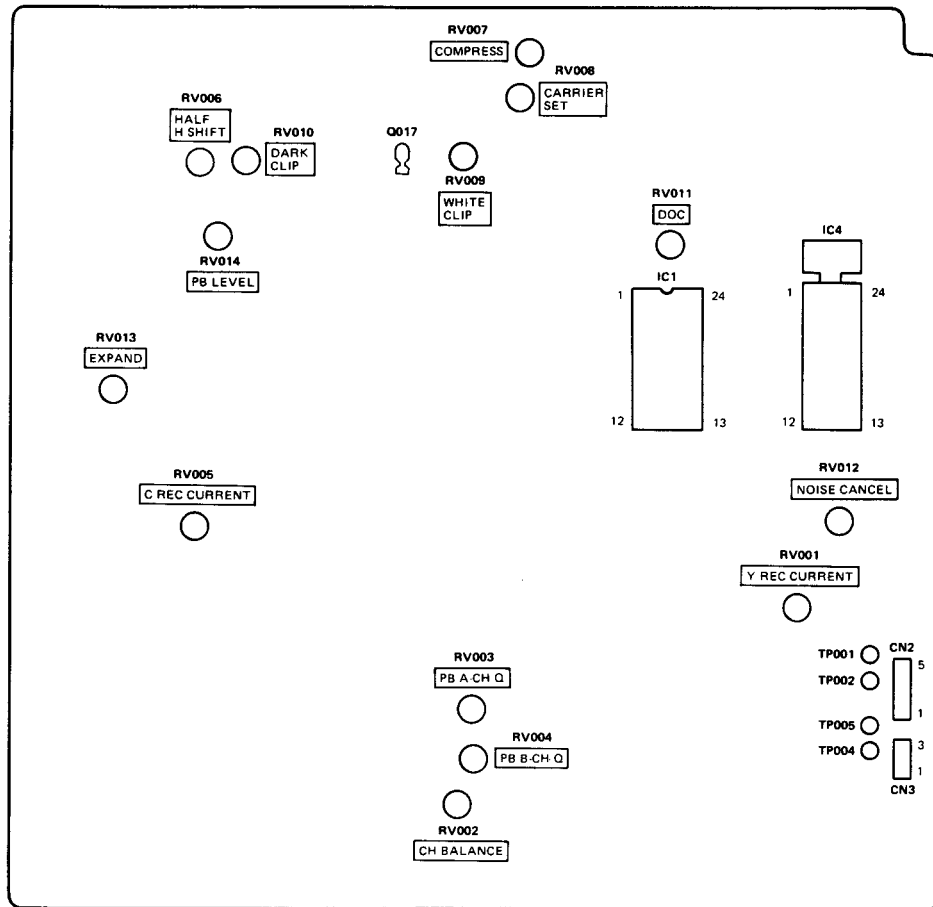
The diagram illustrates the internal structure of the Video Processor (VP), showing the following components and their connections:

- Inputs:**
 - CN1:** A 7x1 input bus at the top left.
 - CN8:** A 7x1 input bus at the top right.
 - DL001:** A vertical input bus on the far left.
 - DL002:** A horizontal input bus in the center.
 - IC9:** A 7x1 input bus on the right side.
- Processing and Control Modules:**
 - RV001:** ACC (Access Control)
 - RV002:** PILOT BURST LEVEL
 - RV003:** COMB (Comb Filter)
 - RV004:** CAR BAL (Color Balance)
 - RV005:** AFC OFFSET (Automatic Frequency Control Offset)
 - RV006:** AFC/CLEANING FLAG
 - RV007:** SECAM ACK LEVEL
 - RV008:** SHIFT
 - RV009:** PILOT BURST FLAG
 - RV010:** PEAK AGC (Automatic Gain Control)
 - RV011:** SYNC AGC (Synchronization Automatic Gain Control)
 - RV012:** DEVIATION
 - RV013:** EX CHROMA LEVEL
- Intermediate and Output Modules:**
 - IC001:** A large central processing block.
 - IC003:** A block below IC001.
 - IC010:** A block below RV001.
 - IC013:** A block to the right of RV010.
 - IC012:** A block at the bottom right.
 - CV001:** 4.43MHz (Color Vsync) block.
 - LV000:** C-BELL (Color Bell) block.
 - LV001:** BELL (Bell Filter) block.
 - LV002:** COMB (Comb Filter) block.
 - LV003:** C-BELL (Color Bell) block.
 - LV004:** ACK fo (Acknowledge feedback) block.
 - Q034:** A small block near the bottom center.
- Interconnections:**
 - Inputs CN1 and CN8 connect to RV011 and RV012.
 - DL001 connects to RV002 and IC001.
 - DL002 connects to RV007, CV001, and IC012.
 - IC9 connects to RV013.
 - RV001 connects to RV006 and IC010.
 - RV002 connects to IC001.
 - RV003 connects to LV002.
 - RV004 connects to IC003.
 - RV005 connects to RV009.
 - RV006 connects to IC010.
 - RV007 connects to LV003.
 - RV008 connects to IC012.
 - RV009 connects to IC012.
 - RV010 connects to IC013.
 - RV011 connects to IC013.
 - RV012 connects to IC013.
 - RV013 connects to IC012.
 - CV001 connects to IC012.
 - LV000 connects to IC012.
 - LV001 connects to IC012.
 - LV002 connects to IC012.
 - LV003 connects to IC012.
 - LV004 connects to IC012.
 - Q034 connects to IC012.

Block diagram of the rear panel of the control console. The diagram shows the following components and their connections:

- CN312**: A connector at the top center.
- RV302**: A variable resistor labeled **SWITCH POSITION B**.
- RV309**: A variable resistor labeled **FWD TORQUE**.
- RV301**: A variable resistor labeled **SWITCH POSITION A**.
- RV303**: A variable resistor labeled **DRUM FREE SPEED**.
- RV310**: A variable resistor labeled **IH CORRECTION**.
- RV308**: A variable resistor labeled **CUE/REV DC BIAS**.
- RV307**: A variable resistor labeled **X1 DC BIAS**.
- IC301**: An integrated circuit, represented by a large vertical rectangle with pins 1, 21, 22, 42, and 5.
- TP402**: A test point located near IC301.
- TP404**: A test point located near IC301.
- TP405**: A test point located near IC301.
- TP407**: A test point located below IC301.
- RV304**: A variable resistor labeled **TRACKING CENTER**.
- IC601**: An integrated circuit, represented by a large horizontal rectangle with pins 1, 32, 64, and 33.
- TP601**: A test point located near IC601.

RY-1 BOARD – COMPONENT SIDE –



TM-41 BOARD – COMPONENT SIDE –

